
# Evaluation of e-Cohesion 2014-2020

## Final Report

PPMI consortium (PPMI Group,
rechenwerk, Ismeri Europa)
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Prepared by PPMI in cooperation with rechenwerk and Ismeri Europa




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# Abstract

The primary purpose of the 'Evaluation of e-Cohesion 2014-2020' was to enable policy learning by evaluating the implementation of e-Cohesion – i.e. the electronic exchange of information between beneficiaries of Cohesion policy programmes and programme authorities – during the 2014-2020 programming period. The evaluation covered the e-Cohesion systems set up in all 27 Member States for Operational Programmes supported by the ERDF and CF, including programmes under the territorial cooperation objective (Interreg). The evaluation relied on a mixed-methods research design, combining qualitative and quantitative research methods such as a large-scale survey programme and in-depth case studies.

The data collected indicate the large scope of e-Cohesion: the evaluation mapped 108 e-Cohesion systems, covering all EU27 Member States, including Interreg programmes. Overall, these systems are well-developed, with most systems addressing the requirements in terms of key principles, processes, functionalities and data security requirements. The systems and their various aspects enjoy high levels of user satisfaction; both the national authorities and beneficiaries that use e-Cohesion systems believe that the benefits of e-Cohesion are higher than the associated costs, and that the systems brought about improvements in all aspects of information exchange, compared to paper-based exchanges. Based on its findings, the evaluation has synthesised a set of potential solutions for programme authorities, which can be useful for addressing the identified challenges. The key point for improvement is interoperability with other electronic systems and registers, as well as reducing the parallel data exchanges that are still taking place.

# Kurzfassung

Die vorliegende Evaluation der Initiative „e-Kohäsion“ 2014-2020 hat den Zweck, die Umsetzung der e-Kohäsion zu untersuchen, d. h. der Systeme zum elektronischen Datenaustausch zwischen den Begünstigten der Programme der europäischen Kohäsionspolitik und den zuständigen Behörden im Planungszeitraum 2014-2020, und soll so politische Lernprozesse ermöglichen. Evaluiert wurden die e-Kohäsion-Systeme der 27 Mitgliedstaaten für operationelle Programme, die aus dem Europäischen Fonds für regionale Entwicklung (EFRE) und dem Kohäsionsfonds (KF) oder im Rahmen des Ziels der europäischen territorialen Zusammenarbeit (Interreg) gefördert werden. Bei der Recherche für die Evaluation wurde eine Kombination aus unterschiedlichen - qualitativen und quantitativen - Methoden eingesetzt, unter anderem ein umfassendes Befragungsprogramm und vertiefte Fallstudien.

Die erhobenen Daten zeigen die große Bandbreite der Maßnahme „e-Kohäsion“: für die Evaluation wurden in den EU27-Mitgliedstaaten einschließlich der Systeme für die Interreg-Programme insgesamt 108 e-Kohäsion-Systeme untersucht. Grundsätzlich sind diese Systeme ausgereifte und erfüllen die Anforderungen in Bezug auf den grundlegenden Aufbau, Prozesse, Funktionalität und Datensicherheit. Der Großteil der Benutzer ist mit den Systemen und ihren unterschiedlichen Aspekten sehr zufrieden. Sowohl die nationalen Behörden als auch die Begünstigten, die e-Kohäsion-Systeme verwenden, sind der Ansicht, dass der Nutzen der e-Kohäsion-Systeme größer ist als die damit verbundenen Kosten und dass mit den Systemen sämtliche Aspekte des Informationsaustausches besser funktionieren als beim Datenaustausch in Papierform. Die Untersuchungsergebnisse wurden im Rahmen der Evaluation zu Empfehlungen zusammengefasst, die die Verwaltungsbehörden dabei unterstützen können, die identifizierten Herausforderungen zu lösen. Das größte Verbesserungspotenzial betrifft die Interoperabilität mit anderen elektronischen Systemen bzw. Registern und die Vermeidung des parallelen Datenaustauschs, der immer noch gelegentlich vorkommt.

# Extrait

L'« Évaluation d'e-Cohesion 2014-2020 » avait pour objectif de permettre l'apprentissage des politiques en évaluant la mise en œuvre d'e-Cohesion – p. ex. l'échange numérique d'informations entre les bénéficiaires des programmes de la politique de Cohesion et les autorités du programme – pendant la période de programmation 2014-2020. L'évaluation a couvert les systèmes d'e-Cohesion mis en place avec les 27 États Membres des Programmes Opérationnels soutenus par le FEDER et le FC, y compris les programmes selon l'objectif de la coopération territorial (Interreg). L'évaluation s'appuie sur une méthode de recherche mixte, combinée à des méthodes de recherche quantitative et qualitative telles qu'un programme d'enquête à grand échelle et des études de cas approfondies.

Les données récoltées indiquent la grande portée de l'e-Cohesion : l'évaluation a cartographié 108 systèmes d'e-Cohesion, couvrant les 27 États Membres de l'Union Européenne, y compris les programmes Interreg. Globalement, ces systèmes sont bien développés, avec la plupart des systèmes répondant aux exigences en termes de principes, processus, fonctionnalités et exigences de sécurité des données principales. Les systèmes et leurs différents aspects bénéficient de hauts niveaux de satisfaction d'utilisateurs, à la fois par les autorités nationales et par les bénéficiaires qui utilisent les systèmes d'e-Cohesion estiment que les avantages d'e-Cohesion sont plus importants que les coûts associés, et que les systèmes ont apportés des améliorations dans tous les aspects de l'échange d'information, en comparaison aux échanges sur papier. Basés sur ses découvertes, l'évaluation a synthétisé un ensemble de solutions pour les autorités du programme, qui peut être utile pour relever les défis identifiés. L'interopérabilité avec les autres systèmes et registres numériques ainsi que la réduction des échanges de données en parallèle qui sont toujours en place sont les points clés d'amélioration.

# Table of contents

# List of abbreviations

| | |
|---|---|
| **AA** | Audit authority |
| **CA** | Certifying authority |
| **CF** | Cohesion Fund |
| **CIR** | Common Implementing Regulation |
| **CPR** | Common Provisions Regulation |
| **EAFRD** | European Agricultural Fund for Rural Development |
| **EC** | European Commission |
| **eIDAS** | Electronic Identification, Authentication, and trust Services |
| **EMFF** | European Maritime and Fisheries Fund |
| **ENI** | European Neighbourhood Instrument |
| **EQ** | Evaluation question |
| **ERDF** | European Regional Development Fund |
| **ESF** | European Social Fund |
| **ESIF** | European Structural Investment Funds |
| **EU** | European Union |
| **FAQ** | Frequently asked questions |
| **FLC** | First-level control |
| **GDPR** | General Data Protection Regulation |
| **IB** | Intermediate body |
| **Interreg** | European Territorial Co-operation |
| **IPA** | Instrument for Pre-Accession Assistance |
| **IT system** | Information technology system |
| **JRC** | Joint Research Centre |
| **JS** | Joint secretariat |
| **MA** | Managing authority |
| **MIS** | Monitoring Information System |
| **OP** | Operational Programme |
| **SFC2014** | System for Fund Management in the European Union |
| **TS** | Tender Specifications |

# List of figures, tables and boxes

## List of figures

## List of tables



## List of boxes

# Executive summary

## 1. Introduction

### Purpose and scope of evaluation

The evaluation of e-Cohesion systems in 2014-2020 had a twofold objective:

- Looking back: collect and provide up-to-date information on the implementation and performance of e-Cohesion systems during the 2014-2020 programming period, and also identify good practice systems that could help to inspire the further development of e-Cohesion systems in other Member States.
- Looking forward: building on the data collected, identify options and possible avenues for improvement in the 2021-2027 programming period to ensure that the users of e-Cohesion systems can continue to make the most of the simplification potential of e-Cohesion.

In light of this twofold objective, it should be emphasised that the underlying purpose of the evaluation is to enable policy learning.

The evaluation covered e-Cohesion systems that have been set up in all 27 Member States for operational programmes supported by the European Regional Development Fund (ERDF) and the Cohesion Fund (CF) during 2014-2020, including programmes under the territorial cooperation objective (Interreg).

### The concept of e-Cohesion

In accordance with Article 122(3) of the Common Provisions Regulation (CPR 2014-2020)[1], the Member state should ensure that all exchanges of information between beneficiaries of Cohesion policy programmes and programme authorities could be done via electronic data exchange systems. These systems are generically referred to as e-Cohesion systems. According to the regulatory requirement, Member States should provide their beneficiaries with (but not oblige them to use) a system to allow the submission of information in electronic form. In practice, the e-Cohesion system is usually a part of a broader management information system required by the CPR for the management of an operational programme (OP). The e-Cohesion system (defined by Art. 122(3))[2], serves as the 'front office', while the system to record and store, in computerised form, data on each operation that is necessary for monitoring, evaluation, financial management (defined by Art. 125(2)(d))[3] plays a role of 'back office'.

Comparison of the provisions of the CPR 2014-2020 and the CPR 2021-2027[4] shows continuity in the e-Cohesion requirements, with no major changes introduced for the 2021-2027 programming period.

[1] Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

[2] Ibid.

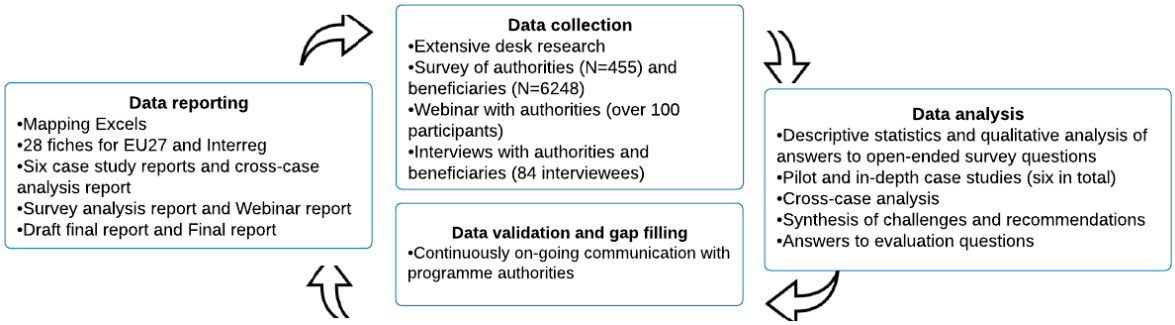
[3] Ibid.

[4] Regulation (EU) 2021/1060 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy.

### Methodological approach and limitations

The evaluation relied on a mixed-methods research design, combining qualitative and quantitative research methods to address eight specific tasks outlined in the Tender Specifications (TS). Given that this evaluation is the first attempt to map e-Cohesion systems to such an extent, it had to rely heavily on the extensive collection of primary data. The evaluation employed a wide desk research (e.g. web search, analysis of documents available on SFC2014, websites of authorities, user manuals, etc.) as the foundational basis for the mapping of systems and their features. Large-scale surveys, in-depth case studies and interviews with programme authorities and beneficiaries were implemented to collect evaluative information on e-Cohesion (to complement the factual information collected via desk research), and to gather the attitudes of beneficiaries and authorities on the relation of e-Cohesion and simplification potential and the reduction of administrative burden, as well as user-friendliness and other aspects relating to the evaluation criteria. Data collection, analysis, validation, and reporting were continuous and, in most cases, parallel processes implemented throughout the evaluation (see figure below).

**Research phases**




*Source: prepared by the evaluation team.*

# 2. Key findings

### Key findings highlight

**E-Cohesion is widely implemented; we identified 108 e-Cohesion systems, which are used for the overwhelming majority of ERDF and CF funded programmes.** Out of the 302 OPs analysed, only eight OPs (four national, four Interreg[5]) do not have a dedicated e-Cohesion system.

**The e-Cohesion systems in place meet the key requirements provided by the CPR and CIR[6] for the 2014-2020 programming period.** Most e-Cohesion systems have implemented the key functionalities, processes, data security requirements, and principles of e-Cohesion. Our survey results indicate that the systems are widely used; they are most widely used for project implementation activities, especially handling the payment claims.

**The overwhelming majority of users agree that using e-Cohesion systems represents an improvement in all aspects of information exchange between beneficiaries and programme authorities**. Around 80% of all beneficiaries and authorities agree that that compared to paper-based processes or email exchanges, the exchange of data through e-Cohesion systems has resulted in a faster exchange of information. Additionally, over 80% of all beneficiaries and authorities that replied to the survey strongly agreed or agreed that the benefits of e-Cohesion (e.g. reduced administrative burden, simplified procedures, etc.) exceed any associated costs with using the system (e.g. financial and time-related aspects) in relation to all key processes.

[5] All four Interreg programmes were European Neighbourhood Instrument (ENI) Cross-Border Cooperation (CBC) operational programmes, which were not obliged to provide their beneficiaries with the possibility to use an electronic data exchange system during the 2014-2020 programming period, as they operated under a different legal framework. However, in the 2021-2027 period, these programmes will also be subject to the provisions of the CPR 2021-2027, and thus also the requirements for e-Cohesion systems.

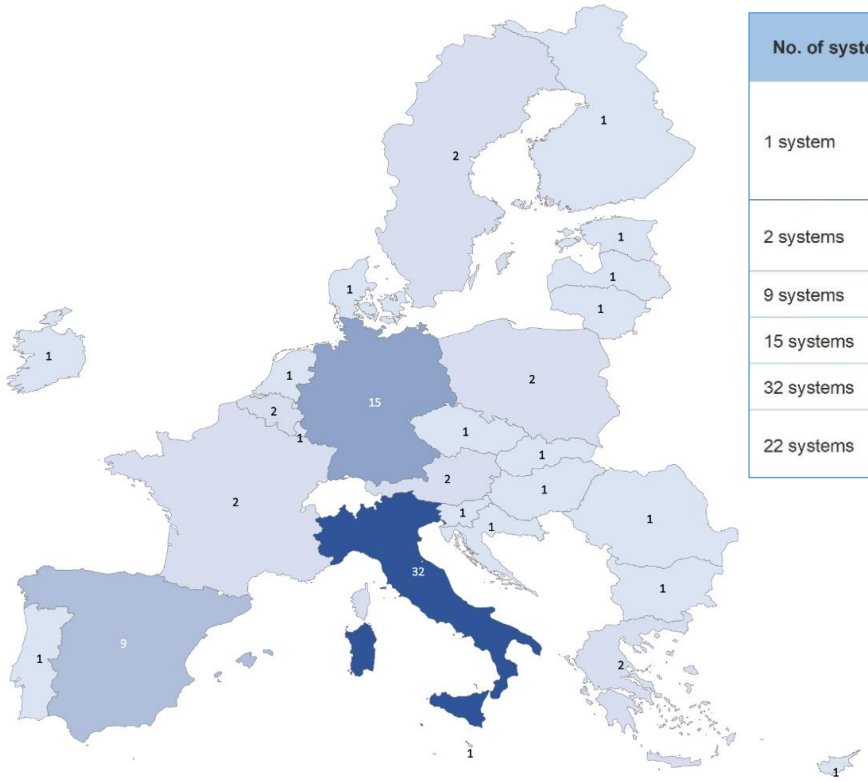
[6] Commission Implementing Regulation (EU) No 1011/2014 of 22 September 2014 laying down detailed rules for implementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council as regards the models for submission of certain information to the Commission and the detailed rules concerning the exchanges of information between beneficiaries and managing authorities, certifying authorities, audit authorities and intermediate bodies.

**A few challenges remain to ensure that users fully reap the benefits of e-Cohesion**; to varying extents, parallel exchanges of information still take place (using e-mail, paper, etc.), especially with information related to audit-related activities, such as management verifications and on-the-spot checks. Extending interoperability beyond the programme-level to the national and the EU level is another vital area for improvement. According to authorities that replied to our survey, establishing interconnections with external applications, registers, and databases, represents the most important challenge for the 2021-2027 programming period.

## Landscape of e-Cohesion systems mapped

In total, the evaluation mapped 108 e-Cohesion systems, covering all EU27, including Interreg programmes. Out of these 108 systems, 75 systems are used only for national/regional OPs, 11 are used for national/regional OPs and Interreg programmes, and 22 systems are used only for Interreg. **We identified that all Member States have e-Cohesion systems**. A majority of the Member States (18) have one e-Cohesion system to manage ERDF and CF interventions, and thus possess a centralised e-Cohesion structure. This is the most common approach. There are also countries with a decentralised approach to e-Cohesion, in which each region/OP typically has its own e-Cohesion system. The following chart depicts the number of e-Cohesion systems identified per country.

**Number of e-Cohesion systems identified per country for 2014-2020 (excluding Interreg-only systems)**




| No. of systems | Country |
|---|---|
| 1 system | BG HR CY CZ DK EE FI HU IE LV LT LU MT NL PT RO SK SI |
| 2 systems | AT BE FR EL PL SE |
| 9 systems | ES |
| 15 systems | DE |
| 32 systems | IT |
| 22 systems | Interreg-only systems |

*Source: prepared by the evaluation team using Geonames*

## Relevance

*Relevance, in the context of e-Cohesion, is defined as the extent to which the objectives of the e-Cohesion initiative are pertinent to the policy priorities and needs faced by the target groups of the intervention.*

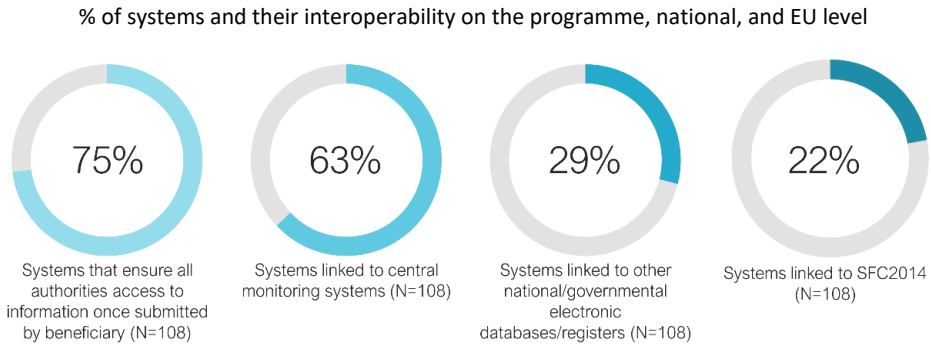
The e-Cohesion systems are largely relevant to all institutional user groups, but the extent of their relevance varies between different types of users. Systems are somewhat less relevant for audit authorities (AAs) compared to other institutional users groups. The survey findings suggest that some systems do not provide the necessary features for AAs to carry out their tasks; almost 60% of AA respondents claim that the systems do not provide the functionality for them to communicate with beneficiaries, and over 60% exchange some information outside the system when planning and implementing audit activities. In addition, whilst the majority e-Cohesion systems support all key processes, the extent to which systems are used in relation to these processes varies. Systems are used most extensively to exchange information relating to payment claims and progress reports. Beneficiaries still use other channels (e.g. e-mail) to exchange data in relation to key processes such as signing contracts and providing documents for controls/verifications, as well as *ad hoc* communication. This relates to a lack of technical features in the e-Cohesions systems, and of national supportive legal frameworks.

Features and functionalities that might improve or impede the relevance of the systems to their users are identified and analysed by the authorities responsible through the collection of user feedback; most e-Cohesion systems collect user feedback to continue adapting to the evolving needs of their stakeholders. Furthermore, our findings suggest a correlation between the attention paid towards user feedback, and the perceived user-friendliness and usefulness of systems.

## Coherence

*Coherence in the context of e-Cohesion is defined as the alignment between the different authorities and systems for the electronic exchange of information for the purpose of implementing EU cohesion policy. Coherence is closely related to interoperability, and thus refers to the programme level, i.e., the extent to which programme authorities have access rights to the system and share data amongst themselves. Like interoperability, the concept of coherence can be extended to the national level and EU level; the former signifies internal coherence, i.e., the interconnection of the e-Cohesion system to other public electronic systems, registers, and databases in the member state. The latter signifies external coherence, i.e., the e-Cohesion systems' interconnection to SFC 2014 as well as any other relevant systems such as keep.eu (for Interreg programmes).*

Across the identified e-Cohesion systems, there is a high level of coherence on the programme level; almost all systems afford programme authorities with access rights to the system, which enables them to access and share data amongst themselves, once submitted by beneficiaries. Internal and external coherence at national and EU levels, respectively, are less developed than coherence at programme level. It is more common for e-Cohesion systems to be internally coherent than externally coherent; Based on our mapping of systems, almost one-third of e-Cohesion systems identified (31 out of the 108) are linked to other national/governmental electronic databases/registers, and the corresponding number for central monitoring systems is almost two-thirds (68 out of the 108). Around one-fifth (24 out of 108) of the systems identified are connected to the SFC, and only one system is connected to keep.eu. It should be noted that there was some incongruence between survey results and mapping data, but the general trends remain; internal and external coherence are areas that warrants further improvement. Interconnections between computerised systems at the national and EU level remains one of the key challenges as it greatly facilitates the submission process and reduces the risk of errors.




*Source: prepared by the evaluation team, based on mapping data.*

## Effectiveness

*Effectiveness refers to the extent to which objectives and intended results are achieved. Our analysis aimed to uncover whether e-Cohesion systems contain the required functionalities, cover the key principles and processes, and whether they are perceived by the users to have delivered the expected simplification, reduction in administrative costs and administrative burdens.*

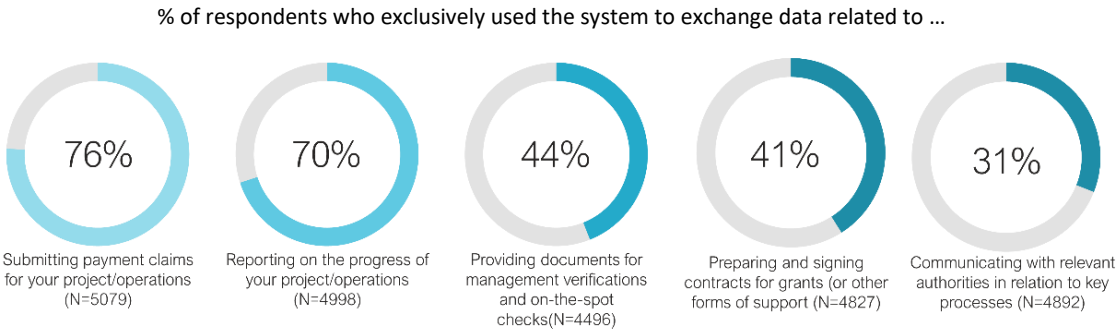
The assessment of effectiveness was guided by the provisions defined in the CPR 2014-2020 and the Implementing Regulation. These are structured and assessed according to key principles, processes, functionalities, and data security requirements.

**Key requirements of e-Cohesion**

| Key processes | Key principles | Key functionalities | Data security requirements |
|---|---|---|---|
| Progress reports; payment claims; exchange of information relating to audits and management verifications. Additionally, the evaluation covered the application process. | Interoperability (i.e. the interconnection of computerised systems; once-only encoding (i.e., beneficiary need only submit the same information once) | Interactive forms; automatic calculations; automatic embedded controls; system-generated alerts; online status tracking; availability of previously processed information. | Guarantee the security, integrity and confidentiality of data by means of the features of encryption, access control in the form of authentication and authorisation, and have a defined incident management process in place in case of technical issue or disruptions. |

*Source: prepared by the evaluation team.*

Most e-Cohesion systems comply, to a large extent, with the key principles, and have implemented the necessary functionalities. While data security requirements are difficult to assess due to the unavailability of publicly accessible data on technical features, our survey findings indicate that 90% of survey respondents agree that data integrity and quality, as well as data security and privacy, have improved significantly due to the introduction of e-Cohesion systems. However, while most systems support all key processes – and even go beyond, by supporting the application process, which is not required by the CPR 2014-2020 – parallel channels for data exchange are still being used throughout their implementation. The extent to which parallel channels for data exchange are used for progress reports and payment claims is limited. Nevertheless, extensive use is made of parallel channels (mostly e-mails) for the exchange of data relating to audit and management verifications.



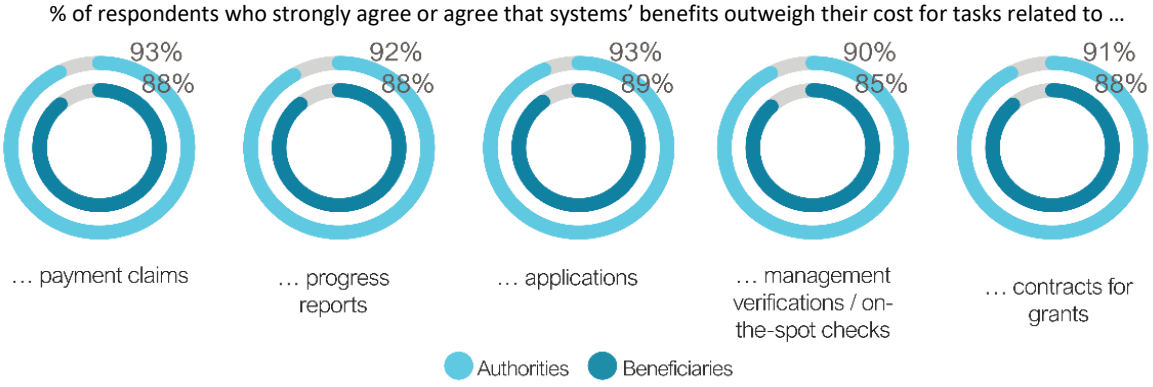

*Source: prepared by the evaluation team based on the survey of beneficiaries - Q.12 "When implementing your project/operation, to what extent did you use the indicated electronic data exchange system for the following processes:"*

Despite the use of parallel channels for the transmission of data exchange in relation to some key process, the findings clearly show that the introduction and use of e-Cohesion systems have led to simplifications from the perspectives of both beneficiaries and authorities. The most significant improvements relate to simplified data management, accessibility, transparency, quality, and integrity.

## Efficiency

*Efficiency, in the context of e-Cohesion, primarily considers the benefits or outcomes of the implementation of e-Cohesion systems (e.g. reduced administrative burdens and simplified procedures) compared with the costs incurred in relation to their deployment and operation.*

In all aspects of programme management, the introduction of e-Cohesion systems have resulted in significant gains in resources and time for the majority of users (compared with previous, paper-based processes) and significantly outweigh the costs of implementing/using e-Cohesion systems. This indicates a high degree of efficiency when assessing the impact of e-Cohesion systems during project application and implementation.




*Source: prepared by evaluation team based on survey of authorities - Q.23 and the survey of beneficiaries - Q.15 "Please assess the following statement: the benefits (e.g. reduced administrative burden, simplified procedures) of the introduction of the electronic data exchange system between beneficiaries and authorities exceeds the associated costs (e.g. the time and effort required to use it) for the following processes:"*

Furthermore, the evaluation findings suggest that a continuous, evolutionary development approach represents an overarching success factor relevant to the efficient functioning of e-Cohesion systems, which can minimise efforts during their introduction and operation.

While the evaluation could not clearly identify one key process that requires the most effort from users of e-Cohesion systems, submitting/checking payment claims are considered a core process for both authorities and beneficiaries. Therefore, maximising systems' support for this process could further increase their value and efficiency. Among the barriers affecting the efficient functioning of e-Cohesion systems, limited interoperability represents a key issue. In addition, a lack of harmonisation and simplification can be highlighted as an

overarching challenge affecting several areas of e-Cohesion, which results in burdens for both authorities and beneficiaries.

## EU added value

*The EU added value criterion explores whether the e-Cohesion initiative, as outlined in the CPR and the Implementing Regulation, has contributed to the development or improvement of national/regional electronic data exchange systems, or has resulted in wider spill-over effects.*

Key aspects of the EU added value of e-Cohesion systems include: the introduction of some e-Cohesion systems in Member States where they did not previously exist, as well as contributions to the continuous improvement of existing systems. The latter is, according to our findings, the most common outcome of e-Cohesion. Additional aspects of EU-added value range from the increased use and coverage of e-Cohesion systems and positive spill-over effects into other policy contexts, with the development of electronic data exchange systems to accommodate national/regional, as well as other EU, funds and schemes.

## User-friendliness

*User-friendliness refers to the extent to which e-Cohesion systems are perceived as sufficiently intuitive, easy to use, self-descriptive, interactive, appealing, timesaving, and otherwise maximise value for their users when handling the exchange and management of data, documents and information.*

Overall, e-Cohesion systems exhibit a high degree of clarity, ease of use and self-descriptiveness. However, notable variation remains between different systems. While not all systems meet all of their users' needs consistently, users overwhelmingly agree that with time and more experience, e-Cohesion systems help them to carry out tasks more efficiently. Nearly all e-Cohesion systems support all of the key functionalities closely associated with user-friendliness, and users are highly satisfied with them overall. In particular, the provision of e-signatures has the potential to greatly reduce administrative burdens by enabling fully paper-free processes.

Furthermore, satisfaction with the support features of e-Cohesion systems is widespread, despite some caveats. Help functionalities and help desk services are well-implemented and largely meet the needs of both beneficiaries and institutional users. Both of these features can serve needs beyond support, such as improving communication between authorities and beneficiaries and contributing to system development.

## Overall insights into what makes a good e-Cohesion system

Drawing on the cross-case analysis of six in-depth case studies, each of which focuses on a selected e-Cohesion system[7] the table below provides some overall insights in terms of lessons learned with regard to which aspects to focus on when developing and maintaining a successful e-Cohesion system.

**Primary aspects and associated actions for a successful e-Cohesion system**

| Aspect | Action |
|---|---|
| **Development** | ▪ Evolutionary development approach – characterised by a high degree of prototyping, continuous improvements, and frequent releases of new versions.<br>▪ User-centric approach – systematic collection of user feedback, user involvement in testing prototypes for new features, consideration of user needs. |

[7] MIS (Greece), e-Toetus (Estonia), e-MS (Interreg), SFINGE2020 (Italy SL2014), (Poland), Balcão2020 (Portugal).

| Aspect | Action |
|---|---|
| | ▪ Versatile development team – the combination of IT skills (may involve procurement of private software developer) and knowledge of programme implementation. |
| **Legal aspects** | ▪ Elimination of paper-based parallel processes – by making the use of the system mandatory or the sole official solution, it eliminates the necessity to maintain parallel processes, and incentivises authorities to provide solutions of high usability. |
| **Key requirements** | ▪ Supports the exchange of structured data – the mere upload of unstructured data (e.g. forms as pdf-files) inhibits further data processing.<br>▪ Data centralisation – by supporting all key processes (including those not yet outlined in minimum requirements, e.g. applications, change requests and communication features), all project-related information is centrally accessible in one place.<br>▪ Interoperability beyond programme level – allows for the fulfilment of once-only encoding, and the extraction and verification of information on a wider scale. |
| **Usefulness** | ▪ Provision of integrated e-signature feature – offers the advantage of fully paper-free processes that reduce the effort required for transport and storage.<br>▪ Addresses the processes that require the most effort – offers efficient support for activities that would otherwise cause the most administrative burden (capturing expenses, handling supporting documents).<br>▪ Offers flexibility – users can complete tasks according to their preferences. |
| **User-friendliness** | ▪ Self-descriptiveness and help features – given that most beneficiaries do not use the system often, functionalities such as tool tips, etc. help users to navigate the system.<br>▪ Automatically embedded validation and automatic calculations – helps to verify information and reduce error rates, which reduces administrative burdens for both beneficiaries and institutional users.<br>▪ Provides appropriate performance and stability – has appropriate server capacities to provide sufficient response time. |

*Source: prepared by the evaluation team.*

# 3. Challenges and potential solutions

The evaluation concludes with findings on challenges to the efficient implementation and functioning of e-Cohesion systems, and how these can be addressed. Thus, each identified challenge is accompanied by a specific, potential solution (or set of potential solutions) addressed mainly to the authorities responsible for implementation of e-Cohesion systems. Below each potential solution we provide some further elaboration on what the solution entails.

| | |
|---|---|
| **Challenge no. 1:** Ensuring effective interoperability with other systems and registers (challenging standardisation and harmonisation to a certain degree; challenging connectedness of interface solutions). | **Potential solution no. 1.1:** Aim to establish once-only encoding at a system-crossing level (connect the e-Cohesion system to external systems such as government registers). |
| | ▪ Establish interface connections to external systems, e.g. government registers, national databases, other services;<br>▪ Make use of the provided statistics, business information, addresses, etc. |
| | **Potential solution no. 1.2**: Harmonise and simplify concepts (names, definitions, descriptions); structures (roles); processes (workflow); tools (forms, templates, documentation); and rules (business logic). |
| | ▪ Unified management and control system; other initiatives to coordinate standardisation (such as HIT developed for Interreg programmes);<br>▪ Standardised names, definitions, roles, workflows, forms, templates, rules. |
| | **Potential solution no. 1.3**: Offer enough flexibility to address programme and call specific requirements. |

| | |
|---|---|
| | ▪ Means of flexibility: configuration, plug-ins, openness to adaptations and extensions;<br>▪ Remaining differences considering rules, processes, information demands. |
| | **Potential solution no. 1.4**: Focus on the exchange and integration of structured data; do not merely consider the exchange of unstructured documents (such as pdf-files and other office documents). |
| | ▪ Define the data scheme in a process-crossing way; interfaces (exchange of data records) allowing real-time synchronisation of transactional data;<br>▪ Seamless processing, accessibility. |
| **Challenge no. 2:** Complexity and dynamic change (development and maintenance of an e-Cohesion system is a complex task, requiring deadlines to be met in combination with tackling requirements that occur late in the development process). | **Potential solution no. 2:** Aim to provide an effective solution that covers all relevant e-Cohesion processes of information exchange. |
| | ▪ Keep in mind that project selection (application) and implementation are strongly interrelated;<br>▪ Cover financing (i.e., different financing sources and changes of financing rates during project realisation), withdrawals and recoveries appropriately;<br>▪ Provide the possibility to upload and exchange digitised supporting documents, as these are necessary for verification and audits;<br>▪ Provide powerful communication features to replace exchange via e-mail;<br>▪ Establish a single point of exchange for data and information. |
| **Challenge no. 3:** Growing user expectations (increasing skills in working with the respective systems also results in higher expectations, a lot of communication, and demand for access to analytical data and functionalities). | **Potential solution no. 3.1:** Be user-centric, aim for high user-friendliness and efficiency. |
| | ▪ Aim to increase process efficiency, faster process throughput and less repetition for processes that cause the most administrative burden;<br>▪ Prioritise the development of desired features based on cost and benefits. Involve users of all types in development. Provide continuous improvements, collect, analyse and consider user feedback also during usual operation times;<br>▪ Increase user-friendliness by offering a solution with a clear structure, a high degree of self-descriptiveness and easy navigation. Offer appropriate help functionality, documentation, and user support;<br>▪ Provide enough room for flexibility, so that users can execute actions in an order that fits their needs and preferences. |
| | **Potential solution no. 3.2**: Aim for excellent user experience by offering the functionalities that maximise the benefits for users. |
| | ▪ Ensure that the system offers appropriate performance and stability in periods of high traffic. Consider using cloud-based server infrastructures that provide high scalability;<br>▪ Features should be provided such as tool tips and client-side validation checks that offer users immediate feedback regarding missing and wrong values;<br>▪ Introduce the calculation of lump sums and flat rates as part of automatic calculations. Also provide support for staff cost calculations and procurements management;<br>▪ Provide beneficiaries with reporting and analysis features and access to project-crossing analytical information; |

| | |
|---|---|
| | ▪ Provide integrated access to all documents exchanged, and flexible retrieval functionalities, allowing full-text search and the application of Boolean expressions[8];<br>▪ Set up a dedicated chat function for communicating to all categories of users, including authorities, when needed. |
| **Challenge no. 4:** Legal aspects (uncertainties regarding the implementation of technical solutions to replace the necessity for handwritten signatures still represents a barrier for some decision-makers; uncertainties also exist with regard to data privacy and GDPR). | **Potential solution no. 4: Provide powerful system features to ensure legal compliance.**<br>▪ Provide an easy-to-use e-signature feature to replace the necessity for handwritten signatures;<br>▪ Provide functionality for the handling and archiving of unstructured supporting documents;<br>▪ Apply appropriate technical and organisational measures (data security, privacy). |
| **Challenge no. 5:** Availability of versatile staff (demands both IT skills and knowledge of programme implementation). | **Potential solution no. 5:** Aim for an appropriate combination of IT skills and knowledge of programme implementation.<br>▪ Make use of state-of-the-art technologies;<br>▪ Implement a flexible IT architecture;<br>▪ Draw on lessons learned; follow a long-term strategy to build up crucial IT skills and business knowledge of programme implementation;<br>▪ Follow an evolutionary and agile development approach. |

[8] A Boolean expression is a combination of different search criteria with AND and OR connections. This enables flexible and specific search functions.

# Zusammenfassung

# 1. Einführung

## Zweck und Gegenstand der Evaluation

Mit der Evaluation der e-Kohäsion-Systeme im Zeitraum 2014-2020 werden zwei Ziele verfolgt:

- Rückblick: Es werden aktuelle Daten über die Umsetzung und Qualität der e-Kohäsion-Systeme im Programmplanungszeitraum 2014-2020 erhoben und analysiert. Außerdem werden bewährte Systeme identifiziert, die als Inspiration zur Weiterentwicklung von e-Kohäsion-Systemen in anderen Mitgliedstaaten dienen können.
- Ausblick: Auf der Grundlage der erhobenen Daten werden Optionen und Wege identifiziert, wie sich diese Systeme im Programmplanungszeitraum 2021-2027 weiter verbessern lassen und gewährleistet werden kann, dass die Benutzer der e-Kohäsion-Systeme das Vereinfachungspotenzial der e-Kohäsion optimal ausschöpfen können.

Im Zusammenhang mit beiden Zielen besteht der tiefere Zweck der Evaluation darin, politische Lernprozesse zu ermöglichen.

Für die Evaluation wurden sämtliche e-Kohäsion-Systeme berücksichtigt, die in den 27 Mitgliedstaaten zwischen 2014 und 2020 für Operationelle Programme eingerichtet wurden, die aus dem Europäischen Fonds für regionale Entwicklung (EFRE) und dem Kohäsionsfonds oder im Rahmen des Ziels der der europäischen territorialen Zusammenarbeit (Interreg) gefördert werden.

## Das Konzept e-Kohäsion

Nach Art. 122 Abs. 3 der Verordnung mit gemeinsamen Bestimmungen (VgB 2014-2020)[9], müssen die Mitgliedstaaten dafür sorgen, dass der gesamte Informationsaustausch zwischen den Begünstigten der Programme, mit denen die Kohäsionspolitik umgesetzt wird, und den für die Verwaltung dieser Programme zuständigen Behörden über elektronische Datenaustauschsysteme erfolgen kann. Diese Systeme werden allgemein als e-Kohäsion-Systeme bezeichnet. Laut den Bestimmungen der Verordnung müssen die Mitgliedstaaten den Begünstigten ein System zur Verfügung stellen, mit dem sie Informationen in elektronischer Form einreichen können (aber nicht müssen). In der Praxis ist das e-Kohäsion-System meist Teil des allgemeinen IT-Systems, das die VgB für die Verwaltung von operationellen Programmen (OP) vorschreibt. Das e-Kohäsion-System (gemäß Art. 122 Abs. 3)[10] dient dabei als „Front Office“ und das System, in dem die für Begleitung, Bewertung, Finanzverwaltung, Überprüfung und Prüfung aller Vorhaben benötigten Daten in elektronischer Form aufgezeichnet und gespeichert werden können (im Sinne von Art. 125 Abs. 2 Buchstabe d)[11], dient als „Back Office“.

[9] Verordnung (EU) Nr. 1303/2013 des Europäischen Parlaments und des Rates vom 17. Dezember 2013 mit gemeinsamen Bestimmungen über den Europäischen Fonds für regionale Entwicklung, den Europäischen Sozialfonds, den Kohäsionsfonds, den Europäischen Landwirtschaftsfonds für die Entwicklung des ländlichen Raums und den Europäischen Meeres- und Fischereifonds sowie mit allgemeinen Bestimmungen über den Europäischen Fonds für regionale Entwicklung, den Europäischen Sozialfonds, den Kohäsionsfonds und den Europäischen Meeres- und Fischereifonds und zur Aufhebung der Verordnung (EG) Nr. 1083/2006 des Rates.

[10] Ebd.

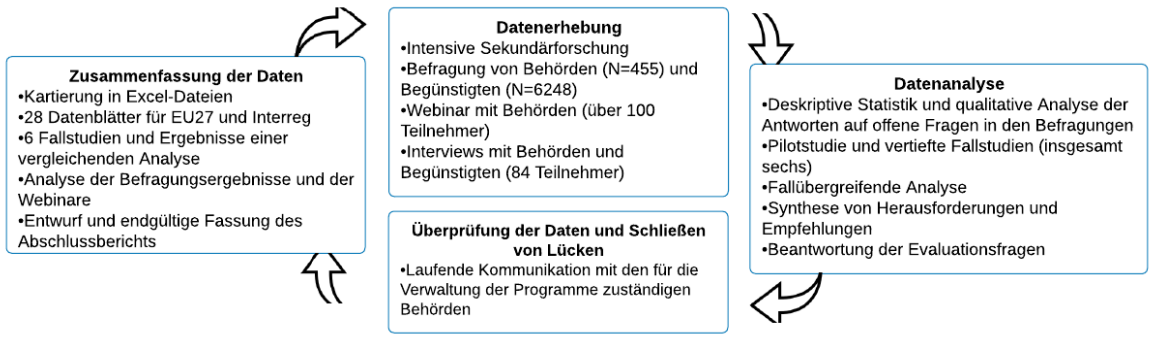
[11] Ebd.

Wenn man die Bestimmungen der VgB 2014-2020 mit denen der VgB 2021-2027[12] vergleicht, zeigt sich, dass die Anforderungen an die e-Kohäsion-Systeme im Programmplanungszeitraum 2021-2027 im Wesentlichen unverändert sind.

### Methodologisches Konzept und Einschränkungen

Um die acht in der Leistungsbeschreibung genannten Aufgaben zu erfüllen, wurde bei der Recherche für die Evaluation eine Kombination aus unterschiedlichen qualitativen und quantitativen Methoden eingesetzt. Da diese Evaluation den ersten Versuch darstellt, alle e-Kohäsion-Systeme umfassend zu kartieren, stützt sie sich zu einem wesentlichen Teil auf bereits vorhandene Primärdaten. Als Grundlage für die Kartierung der Systeme und deren Funktionen wurde im Rahmen der Evaluation eine umfassende Sekundärforschung durchgeführt (Internetrecherche, Analyse von Dokumenten zum System zur Mittelverwaltung in der Europäischen Union (SCF2014), Behörden-Websites, Benutzerhandbücher usw.). Um die durch Sekundärforschung gesammelten faktischen Daten zu ergänzen und bewertenden Informationen zur e-Kohäsion zu erheben, wurden groß angelegte Befragungen, vertiefte Fallstudien und Interviews mit Vertretern der Verwaltungsbehörden und Begünstigten durchgeführt. Auf diesem Weg wurde untersucht, wie die Begünstigten und die Behörden die e-Kohäsion, die dadurch erzielte Vereinfachung und administrative Entlastung sowie die Nutzerfreundlichkeit und andere für die Evaluation wichtige Aspekte der Systeme einschätzen. Erhebung, Analyse, Überprüfung und Zusammenfassung der Daten verliefen als fortlaufende und, in den meisten Fällen, parallele Prozesse.

**Evaluationsschritte**




*Quelle: Erstellt vom Evaluationsteam.*

# 2. Die wichtigsten Ergebnisse

### Die wichtigsten Ergebnisse auf einen Blick

**Das Konzept e-Kohäsion wird großflächig umgesetzt: es wurden 108 e-Kohäsion-Systeme identifiziert und die große Mehrzahl aller aus dem EFRE und KF geförderten Programme nutzt ein entsprechendes System.** Von den 302 analysierten OP, verfügen nur acht (vier nationale und vier Interreg[13]) über kein spezielles e-Kohäsion-System.

[12] Verordnung (EU) 2021/1060 mit gemeinsamen Bestimmungen für den Europäischen Fonds für regionale Entwicklung, den Europäischen Sozialfonds Plus, den Kohäsionsfonds, den Fonds für einen gerechten Übergang und den Europäischen Meeres-, Fischerei- und Aquakulturfonds sowie mit Haushaltsvorschriften für diese Fonds und für den Asyl-, Migrations- und Integrationsfonds, den Fonds für die innere Sicherheit und das Instrument für finanzielle Hilfe im Bereich Grenzverwaltung und Visumpolitik.

[13] Alle vier Interreg-Programme waren operationelle Programme zur grenzüberschreitenden Zusammenarbeit im Rahmen des Europäischen Nachbarschaftsinstruments (ENI). Diese Programme haben eine andere Rechtsgrundlage, weshalb den Begünstigten im Programmplanungszeitraum 2014-2020 keine Möglichkeit zur Nutzung von elektronischen

**Die bestehenden e-Kohäsion-Systeme entsprechen den wichtigsten Anforderungen der VgB und der Durchführungsverordnung [14] für den Programmplanungszeitraum 2014-2020.** Die meisten e-Kohäsion-Systeme haben die wichtigsten Funktionen, Prozesse, Maßnahmen zur Datensicherheit und Grundsätze der e-Kohäsion umgesetzt. Wie die Befragungsergebnisse zeigen, werden die Systeme intensiv genutzt, vor allem für Tätigkeiten im Rahmen der Projektumsetzung und der Bearbeitung von Zahlungsaufforderungen.

**Die überwältigende Mehrheit der Benutzer ist der Meinung, dass die Verwendung von e-Kohäsion-Systemen alle Aspekte des Informationsaustausches zwischen den Begünstigten und den für die Verwaltung der Programme zuständigen Behörden erleichtert**. Rund 80 % aller Begünstigten und Behörden sind der Ansicht, dass der Austausch von Daten über e-Kohäsion-Systeme im Vergleich zu papierbasierten Verfahren oder dem Austausch per E-Mail zu einem schnelleren Informationsaustausch geführt hat. Des Weiteren stimmten in der Befragung 80 % aller Begünstigten und Behörden der Aussage zu, dass der Nutzen der e-Kohäsion (z. B. reduzierter Verwaltungsaufwand, vereinfachte Verfahren usw.) sämtliche mit der Verwendung des Systems verbundenen Kosten (z. B. finanziell und Arbeitszeit) bei allen wichtigen Abläufen übersteigt.

**Es gibt noch ein paar Herausforderungen, die verhindern, dass die Benutzer die Vorteile der e-Kohäsion voll nutzen können**; insbesondere bei Verwaltungsprüfungen, Vor-Ort-Kontrollen und anderen Tätigkeiten zur Überprüfung der Vorhaben kommt es immer noch vor, dass Informationen über parallele Kanäle übermittelt werden (per E-Mail, in Papierform usw.). Großes Verbesserungspotenzial gibt es außerdem bei der Erweiterung der Interoperabilität über die Programmebene hinaus auf die nationale und EU-Ebene. Laut den Behörden, die an unserer Befragung teilgenommen haben, ist die Einrichtung von Verknüpfungen mit externen Anwendungen, Registern und Datenbanken die wichtigste Aufgabe für den Programmplanungszeitrum 2021-2027.

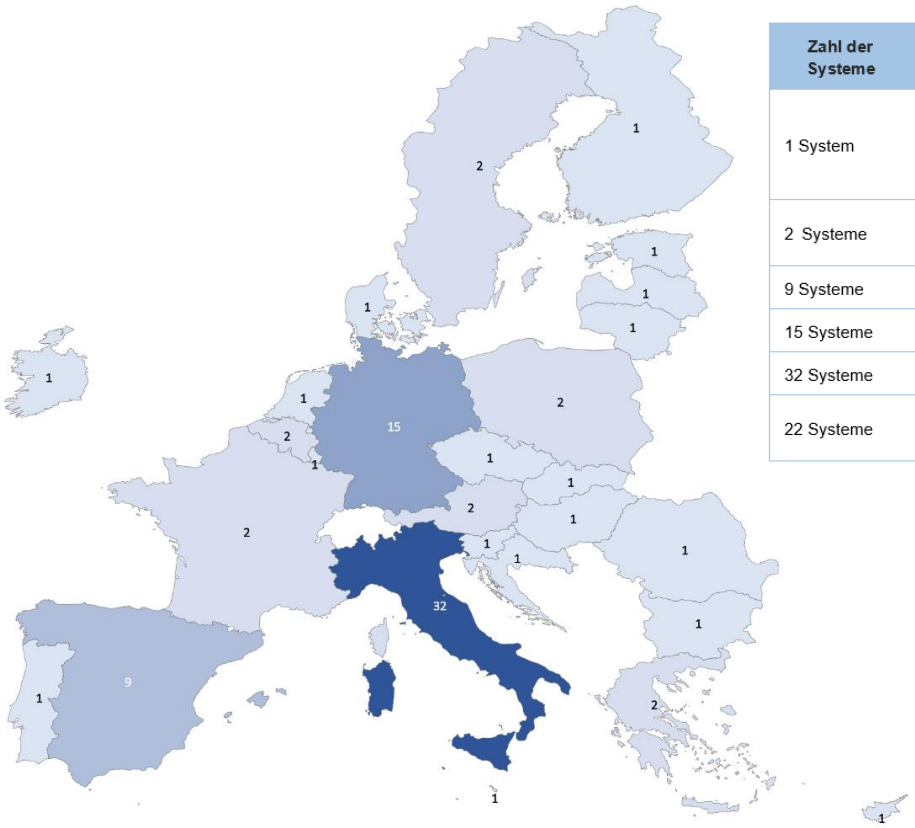
## Landkarte der untersuchten e-Kohäsion-Systeme

Einschließlich der Systeme für Interreg-Programme, wurden für die Evaluation insgesamt 108 e-Kohäsion-Systeme aus der gesamten EU27 kartiert. Von diesen 108 Systemen werden 75 ausschließlich für nationale bzw. regionale OP verwendet, 11 für nationale bzw. regionale OP und Interreg-Programme und 22 ausschließlich für Interreg. **Laut unserer Recherche verfügen alle Mitgliedstaaten über e-Kohäsion-Systeme**. Die Mehrzahl der Mitgliedstaaten (18) hat nur ein e-Kohäsion-System für die Verwaltung von EFRE- und KF-Vorhaben, das heißt eine zentralisierte e-Kohäsion-Struktur. Dieser Ansatz ist am weitesten verbreitet. Es gibt aber auch Länder mit einer dezentralisierten e-Kohäsion-Struktur, bei der in der Regel jede Region bzw. jedes operationelle Programm über ein eigenes e-Kohäsion-System verfügt. In der nachstehenden Abbildung ist die Zahl der e-Kohäsion-Systeme pro Land dargestellt.

Datenaustauschsystemen bereitgestellt werden musste. Im Zeitraum 2021-2027 gelten die Bestimmungen der VgB 2021-2017, und damit auch die Pflicht zur Bereitstellung eines e-Kohäsion-Systems, auch für diese Programme.

[14] Durchführungsverordnung (EU) Nr. 1011/2014 vom 22. September 2014 mit detaillierten Regelungen für die Durchführung der Verordnung (EU) Nr. 1303/2013 des Europäischen Parlaments und des Rates im Hinblick auf die Muster für die Übermittlung bestimmter Informationen an die Kommission und detaillierten Regelungen für den Informationsaustausch zwischen Begünstigten und Verwaltungsbehörden, Bescheinigungsbehörden, Prüfbehörden und zwischengeschalteten Stellen.

**Zahl der e-Kohäsion-Systeme pro Land im Zeitraum 2014-2020 (ohne Systeme, die ausschließlich für Interreg genutzt werden)**



| Zahl der Systeme | Land |
|---|---|
| 1 System | BG HR CY CZ DK EE FI HU IE LV LT LU MT NL PT RO SK SI |
| 2 Systeme | AT BE FR EL PL SE |
| 9 Systeme | ES |
| 15 Systeme | DE |
| 32 Systeme | IT |
| 22 Systeme | Systeme nur für Interreg |

*Quelle: Erstellt vom Evaluationsteam mit Hilfe von Geonames*

## Relevanz

*Die Relevanz der e-Kohäsion wurde für diese Evaluation daran gemessen, ob die e-Kohäsion-Systeme den politischen Prioritäten und den Bedürfnissen der Zielgruppen entsprechen.*

Die e-Kohäsion-Systeme sind im Wesentlichen für alle institutionellen Benutzergruppen relevant, allerdings nicht für alle Nutzer gleich stark. Für Prüfbehörden (PB) sind die Systeme etwas weniger relevant als für andere institutionelle Benutzergruppen. Die Ergebnisse der Befragung zeigen, dass einige Systeme nicht alle Funktionen enthalten, die PB für ihre Aufgaben benötigen. Fast 60 % der befragten PB geben an, dass die Systeme ihnen keine Möglichkeit zur Kommunikation mit Begünstigten bieten, und über 60 % tauschen bei der Planung und Durchführung von Überprüfungen Informationen außerhalb des Systems aus. Außerdem unterstützt zwar die Mehrheit der e-Kohäsion-Systeme alle wichtigen Prozesse, allerdings werden die Systeme nicht für alle Prozesse gleich oft genutzt. Am häufigsten werden die Systeme genutzt, um Informationen in Bezug auf Zahlungsaufforderungen und Fortschrittsberichte auszutauschen. Im Zusammenhang mit der Unterzeichnung von Verträgen und der Übermittlung von Dokumenten für Kontrollen bzw. Überprüfungen sowie zur *ad hoc*-Kommunikation nutzen viele Begünstigte aber weiterhin auch andere Kanäle (z. B. E-Mail). Gründe hierfür sind das Fehlen entsprechender technischer Funktionen bei den e-Kohäsion-Systemen und Hindernisse durch die nationale Rechtsgrundlage.

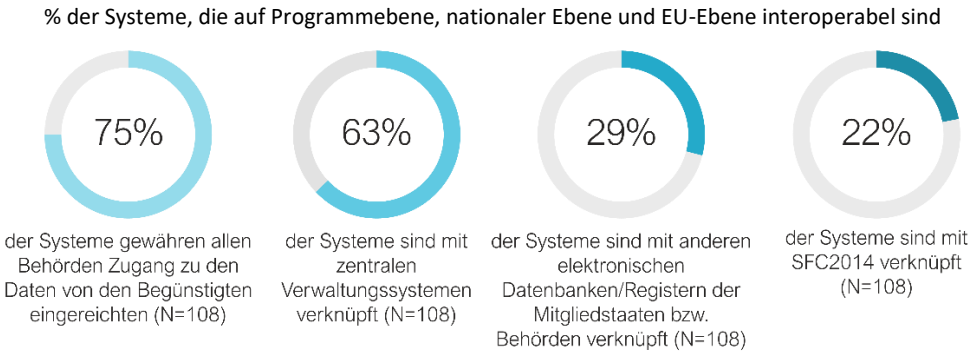
Die zuständigen Behörden identifizieren und analysieren anhand der Rückmeldungen von Benutzern Merkmale und Funktionen, die die Relevanz der Systeme für ihre Benutzer

verbessern oder mindern könnten. Die meisten e-Kohäsion-Systeme sammeln die Rückmeldungen der Benutzer und können an neue Bedürfnisse der beteiligten Interessenträger angepasst werden. Außerdem deuten unsere Ergebnisse darauf hin, dass die Systeme als besonders benutzerfreundlich und nützlich bewertet werden, bei denen die Rückmeldungen der Benutzer eine große Rolle spielen.

## Kohärenz

*Im Kontext der e-Kohäsion wird Kohärenz daran gemessen, wie gut die verschiedenen Behörden und die Systeme zum elektronischen Datenaustausch bei der Umsetzung der Kohäsionspolitik der EU aufeinander abgestimmt sind. Die Kohärenz hängt eng mit der Interoperabilität zusammen und bezieht sich vor allem auf die Programmebene, d. h. auf die Frage, welche mit dem Programm befassten Behörden Zugangsrechte für das System besitzen und miteinander Daten austauschen können. Wie die Interoperabilität kann auch das Konzept der Kohärenz auf die nationale und die EU-Ebene erweitert werden, wobei es bei ersterer um die interne Kohärenz geht, d. h. die Verknüpfung des e-Kohäsion-Systems mit anderen öffentlichen elektronischen Systemen, Register und Datenbanken in den Mitgliedstaaten. Letztere bezeichnet die externe Kohärenz, d. h. die Verknüpfung der e-Kohäsion-Systeme mit SFC 2014 und anderen einschlägigen Systemen, wie keep.eu (für Interreg-Programme).*

Bei allen untersuchten e-Kohäsion-Systemen besteht auf der Programmebene eine umfassende Kohärenz. Bei fast allen Systemen haben die für die Programmverwaltung zuständigen Behörden Zugangsrechte zum System, mit denen sie auf Daten, die von den Begünstigten eingereicht wurden, zugreifen und die Daten an andere Behörden weiterleiten können. Die interne und externe Kohärenz auf der nationalen bzw. EU-Ebene ist weniger ausgeprägt als die Kohärenz auf Programmebene. Außerdem sind mehr e-Kohäsion-Systeme intern kohärent als extern kohärent; gemäß unserer Kartierung der Systeme sind fast ein Drittel aller untersuchten e-Kohäsion-Systeme (31 von 108) mit anderen elektronischen Datenbanken oder Registern der Mitgliedstaaten und Behörden verknüpft und bei den zentralen Verwaltungssysteme sind es fast zwei Drittel (68 von 108). Rund ein Fünftel (24 von 108) der analysierten Systeme sind mit SFC verbunden und nur ein System mit keep.eu. Wir möchten darauf hinweisen, dass es gewisse Widersprüche zwischen den Befragungsergebnissen und den Kartierungsdaten gibt. Dennoch bleibt grundsätzlich festzuhalten, dass die interne und externe Kohärenz zu den Bereichen gehören, in denen noch Verbesserungspotenzial besteht. Die Verknüpfung unterschiedlicher computergestützter Systeme auf nationaler und EU-Ebene ist weiterhin eine der größten Herausforderungen und würde die Einreichung von Informationen erleichtern und das Fehlerrisiko mindern.




*Quelle: erstellt vom Evaluationsteam auf der Grundlage der Kartierungsdaten.*

## Effektivität

*Die Effektivität wird daran gemessen, ob die Systeme die Zielvorgaben und vorgesehenen Ergebnisse erreichen. In unserer Analyse wurde geprüft, ob die e-Kohäsion-Systeme alle*

*geforderten Funktionen enthalten, die wichtigsten Grundsätze und Prozesse abdecken und nach Ansicht der Benutzer die Abläufe wie vorgesehen vereinfacht und die administrativen Kosten und den Verwaltungsaufwand gesenkt haben.*

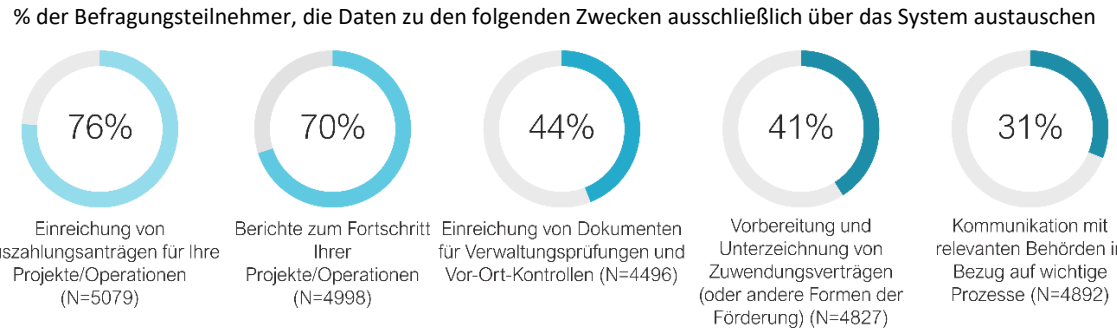
Für die Bewertung der Effektivität wurden vor allem die Bestimmungen der VgB 2014-2020 und der Umsetzungsverordnung berücksichtigt. Diese wurden anhand der wichtigsten Grundsätze, Prozesse, Funktionen und den Anforderungen an die Datensicherheit strukturiert und bewertet.

**Wichtigste Anforderungen an e-Kohäsion-Systeme**

| Prozesse | Grundsätze | Funktionen | Datensicherheit |
|---|---|---|---|
| Fortschrittsberichte, Auszahlungsanträge, Austausch von Informationen zu Prüfungen und Überprüfungen der Verwaltung. Außerdem wurde das Einreichungsverfahren bewertet. | Interoperabilität (d. h. die Verknüpfung von computergestützten Systemen, Einmal-Codierung (d. h. Begünstigte müssen dieselben Daten nur einmal eingeben) | Interaktive Formulare, automatische Berechnungen, automatische eingebettete Kontrollen, systemgenerierte Meldungen, Online-Statusverfolgung, Verfügbarkeit aller früher abgewickelten Daten. | Sicherheit, Integrität und Vertraulichkeit der Daten werden durch Verschlüsselung, Zugangskontrolle durch Authentifizierung und Berechtigungszuweisung gewährleistet. Bei technischen Problemen oder Störungen gibt es ein definiertes Ereignismanagement. |

*Quelle: Erstellt vom Evaluationsteam.*

Die meisten e-Kohäsion-Systeme entsprechen im Wesentlichen den wichtigsten Grundsätzen und verfügen über alle erforderlichen Funktionen. Die Datensicherheit lässt sich nur schwer bewerten, weil Daten zu den technischen Merkmalen der Systeme nicht öffentlich zugänglich sind. Allerdings sind laut unseren Befragungen 90 % der Teilnehmer der Meinung, dass sich sowohl Datenintegrität und Datenqualität als auch Datensicherheit und -vertraulichkeit durch die Einführung der e-Kohäsion-Systeme stark verbessert haben. Aber obwohl die meisten Systeme alle wichtigen Prozesse ermöglichen – und sogar noch über die in der VgB aufgeführten Anforderungen hinausgehen und Antragsverfahren unterstützen – werden trotzdem weiterhin parallele Kanäle zum Datenaustausch verwendet. Dabei werden Fortschrittsberichte und Auszahlungsanträge nur sehr selten über parallele Kanäle abgewickelt. Für den Austausch von Daten in Bezug auf Prüfungen und Überprüfungen der Verwaltung werden dagegen sehr oft parallele Kanäle genutzt (vor allem E-Mails).



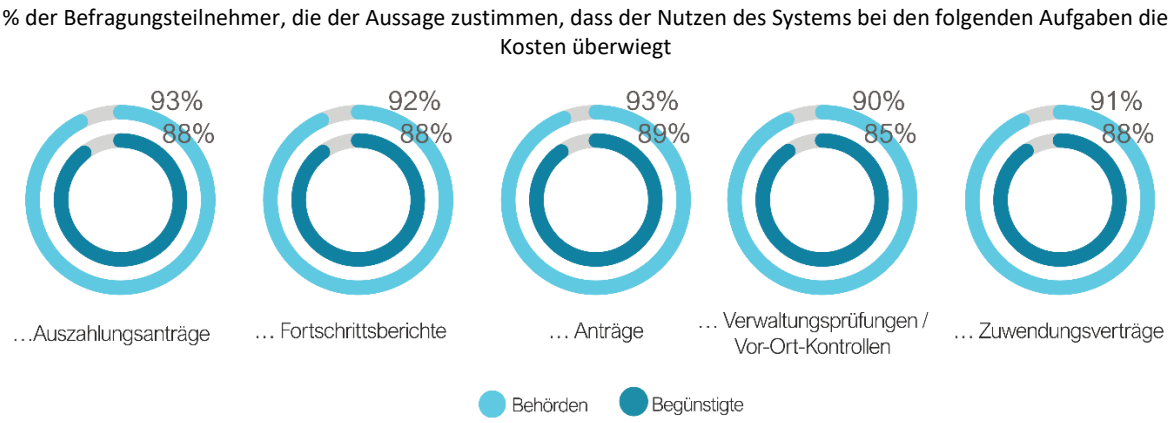

*Quelle: erstellt vom Evaluationsteam auf der Grundlage der Befragung der Begünstigten - F.12 „Inwieweit verwenden Sie bei der Umsetzung Ihrer Projekte/Operationen das angegebene elektronische Datenaustauschsystem für die folgenden Prozesse“*

Obwohl für einige wichtige Prozesse weiterhin parallele Kanäle zum Datenaustausch genutzt werden, zeigen die Ergebnisse eindeutig, dass die Einführung und Verwendung von e-Kohäsion-Systemen die Abläufe aus Sicht der Begünstigten sowie der Behörden vereinfacht haben. Die größten Verbesserungen betreffen die vereinfachte Datenverwaltung und die bessere Verfügbarkeit, Transparenz, Qualität und Integrität der Daten.

## Effizienz

*Im Zusammenhang der e-Kohäsion misst sich die Effizienz vor allem an den Nutzen oder Ergebnissen, die durch die Umsetzung der e-Kohäsion-Systeme erzieht werden, (z. B. weniger Verwaltungsaufwand und vereinfachte Verfahren) im Verhältnis zu den mit der Einführung und dem Betrieb der Systeme verbundenen Kosten.*

In allen Aspekten der Programmverwaltung hat die Einführung von e-Kohäsion-Systemen dazu geführt, dass die Mehrzahl der Benutzer für dieselben Prozesse nun wesentlich weniger Ressourcen und Zeit brauchen als für die alten papierbasierten Prozesse. Diese Ersparnis überwiegt die Kosten für die Einführung und Verwendung der e-Kohäsion-Systeme bei weitem. Das zeigt, dass die e-Kohäsion-Systeme bei der Beantragung und Umsetzung von Projekten äußerst effizient sind.




*Quelle: erstellt vom Evaluationsteam auf der Grundlage der Befragung der Behörden - F. 23 und der Befragung der Begünstigten - F 15 „Bitte bewerten Sie die folgende Aussage: Der Nutzen der Einführung des elektronischen Datenaustauschsystems (z. B. ein geringerer Verwaltungsaufwand oder vereinfachte Verfahren) zwischen Begünstigten und Behörden übersteigt die damit verbundenen Kosten (z. B. der Zeit- und Arbeitsaufwand für die Nutzung) für die folgende Prozesse:“*

Außerdem weisen die Untersuchungsergebnisse darauf hin, dass eine fortlaufende evolutionäre Weiterentwicklung des Systems einen wichtigen Erfolgsfaktor für die effiziente Funktion der e-Kohäsion-Systeme darstellt und die Kosten für deren Einführung und Betrieb minimiert.

Die Evaluation konnte nicht eindeutig feststellen, welcher Prozess für die Benutzer der e-Kohäsion-Systeme mit dem größten Aufwand verbunden ist. Allerdings betrachten sowohl die Behörden als auch die Begünstigten die Einreichung bzw. Prüfung von Auszahlungsanträgen als zentralen Prozess. Eine Optimierung der entsprechenden Funktionen könnte daher den Nutzen und die Effizienz der Systeme weiter verbessern. Die eingeschränkte Interoperabilität ist das Hindernis, dass die Effizienz der e-Kohäsion-Systeme am stärksten beeinträchtigt. Außerdem sind mehrere Bereiche der e-Kohäsion noch nicht ausreichend harmonisiert und vereinfacht. Auch dies ist ein allgemeines Problem, das sowohl die Behörden als auch die Begünstigten belastet.

## Europäischer Mehrwert

*Für das Kriterium des europäischen Mehrwerts wird untersucht, ob die Initiative e-Kohäsion gemäß den Vorgaben der VgB und der Umsetzungsverordnung zur Entwicklung oder Verbesserung nationaler bzw. regionaler elektronischer Datenaustauschsysteme beigetragen oder zu anderen Ausstrahlungseffekten geführt hat.*

Die Initiative e-Kohäsion der Union hatte vor allem den folgenden Mehrwert: die Einführung von e-Kohäsion-Systemen in Mitgliedstaaten, die davor keine entsprechenden Systeme hatten, und Anstöße für die laufende Verbesserung bestehender Systeme. Letzteres ist unserer Recherche zufolge das häufigste Ergebnis der e-Kohäsion-Initiative. Zum

europäischen Mehrwert gehören aber auch die größere Nutzung und Reichweite der e-Kohäsion-Systeme und Ausstrahlungseffekte in andere Politikbereiche, insbesondere durch die Entwicklung von elektronischen Datenaustauschsystemen für nationale bzw. regionale Fonds und Fördersysteme und andere Fonds der EU.

## Benutzerfreundlichkeit

*Die Benutzerfreundlichkeit wird daran gemessen, ob die Benutzer die e-Kohäsion-Systeme als intuitiv, leicht zu verwenden, selbsterklärend, interaktiv und attraktiv wahrnehmen und der Meinung sind, dass diese beim Austausch und der Verwaltung von Daten, Dokumenten und Informationen zur Zeitersparnis und einem sonstigen Mehrwert führen.*

Insgesamt werden die e-Kohäsion-Systeme als äußerst klar, leicht zu verwenden und selbsterklärend wahrgenommen. Allerdings gibt es große Unterschiede zwischen den einzelnen Systemen. Obwohl nicht alle Systeme sämtliche Bedürfnisse ihrer Benutzer erfüllen, sind die meisten Benutzer der Überzeugung, dass sie mit der Zeit und mehr Erfahrung ihre Aufgaben mit Hilfe der e-Kohäsion-Systeme effizienter bewältigen können. Fast alle e-Kohäsion-Systeme unterstützen sämtliche Funktionen, die für die Benutzerfreundlichkeit relevant sind, und die Benutzer sind mit den Systemen insgesamt äußerst zufrieden. Insbesondere die Unterstützung von elektronischen Signaturen ermöglicht vollständig papierlose Abläufe und hat das Potenzial, den Verwaltungsaufwand stark zu reduzieren.

Trotz einiger Vorbehalte ist ein Großteil der Benutzer mit den Support-Funktionen der e-Kohäsion-Systeme zufrieden. Die Hilfefunktionen und Help-Desks sind gut umgesetzt und entsprechend im Wesentlichen den Bedürfnissen der Begünstigten und der institutionellen Benutzer. Beide Funktionen gehen über den technischen Support hinaus und verbessern unter anderem die Kommunikation zwischen Behörden und Begünstigten. Außerdem tragen sie zur Weiterentwicklung der Systeme bei.

## Allgemeine Merkmale eines guten e-Kohäsion-Systems

Im Rahmen der Evaluation wurden vertiefte Fallstudien zu sechs ausgewählten e-Kohäsion-Systemen durchgeführt[15] und im Rahmen einer übergreifenden Analyse ausgewertet. Auf dieser Grundlage ist in der folgenden Tabelle grob zusammengefasst, auf welche Aspekte bei der Entwicklung und Pflege eines erfolgreichen e-Kohäsion-Systems besonders geachtet werden sollte.

**Wichtige Aspekte und zugehörige Maßnahmen für ein erfolgreiches e-Kohäsion-System**

| Aspekt | Maßnahme |
|---|---|
| **Entwicklung** | ▪ Evolutionärer Entwicklungsprozess – frühe Entwicklung eines Prototyps, laufende Verbesserungen und häufige Veröffentlichung neuer Versionen.<br>▪ Benutzerzentrierter Ansatz – systematische Erfassung von Benutzerkommentaren, Beteiligung der Benutzer an der Testung neuer Funktionen, Berücksichtigung der Benutzerbedürfnisse.<br>▪ Vielseitiges Entwicklungsteam - Kombination von IT-Kompetenzen (möglicherweise Beauftragung externer Software-Entwickler) und Know-how zur Umsetzung der Förderprogramme. |
| **Rechtliche Aspekte** | ▪ Eliminierung von papierbasierten parallelen Prozessen – dazu sollte die Verwendung des Systems verpflichtend vorgeschrieben oder als einzige offizielle Lösung definiert werden. Dadurch müssen keine parallelen Prozesse mehr gepflegt werden und die Behörden erhalten Anreize, die Bedienbarkeit zu optimieren. |
| **Wichtigste Anforderungen** | ▪ Der Austausch strukturierter Daten wird unterstützt – das Hochladen unstrukturierter Daten (z. B. Formulare als PDF-Dateien) erschwert die weitere Datenverarbeitung. |

[15] MIS (Griechenland), e-Toetus (Estland), e-MS (Interreg), SFINGE2020 (Italien SL2014), (Polen), Balcão2020 (Portugal).

| Aspekt | Maßnahme |
|---|---|
| | ▪ Datenzentralisierung – wenn alle wichtigen Prozesse unterstützt werden (auch wenn sie in den Mindestanforderungen noch nicht enthalten sind, z. B. Anträge, Änderungen und Kommunikationsfunktionen) sind alle projektbezogenen Informationen an einer Stelle zentral verfügbar.<br>▪ Interoperabilität über die Programmebene hinaus – ermöglicht die Einmal-Codierung und das Abrufen und Prüfen von Informationen durch weitere Behörden. |
| **Nützlichkeit** | ▪ Integrierte Funktion zur elektronischen Signatur – bietet den Vorteil vollständig papierloser Prozesse, bei denen keine Dokumente versendet und aufbewahrt werden müssen.<br>▪ Konzentrationen auf besonders aufwändige Prozesse – bietet effiziente Unterstützung bei Aufgaben, die vorher mit hohem Verwaltungsaufwand verbunden waren (Erfassung von Ausgaben, Verwaltung von Dokumenten).<br>▪ Flexibilität – die Benutzer können Aufgaben so erledigen, wie es ihnen am liebsten ist. |
| **Benutzerfreundlichkeit** | ▪ Selbsterklärende Stuktur und Hilfefunktionen – da die meisten Begünstigten das System nur selten nutzen, helfen Tool-Tipps und ähnliche Funktionen den Benutzern dabei, sich im System zurecht zu finden.<br>▪ Automatisch eingebettete Kontrollen und Berechnungen – helfen bei der Prüfung von Informationen und senken die Fehlerquote und damit den Verwaltungsaufwand für Begünstigte und institutionelle Benutzer.<br>▪ Hohe Leistung und Stabilität – angemessene Server-Kapazitäten gewährleisten kurze Reaktionszeiten. |

*Quelle: Erstellt vom Evaluationsteam.*

# 3. Herausforderungen und mögliche Lösungen

Zum Abschluss der Evaluation wird im Folgenden zusammengefasst, welche Herausforderungen die effiziente Umsetzung und Funktion von e-Kohäsion-Systemen beeinträchtigen und wie diese Herausforderungen überwunden werden können. Das heißt, den identifizierten Herausforderungen wird ein konkreter Lösungsvorschlag (bzw. mehrere Vorschläge) gegenübergestellt. Diese sind vorwiegend für die Behörden gedacht, die für die Umsetzung von e-Kohäsion-Systemen zuständig sind. Unter den Vorschlägen führen wir im Detail aus, was diese Lösung jeweils beinhaltet.

| | |
|---|---|
| **Herausforderung Nr. 1:** Keine effiziente Interoperabilität mit anderen Systemen und Registern (eingeschränkte Standardisierung und Harmonisierung, Probleme bei der Verbindung mit Schnittstellen). | **Lösungsvorschlag Nr. 1.1:** Einmal-Codierung auf der systemübergreifenden Ebene (Verknüpfung des e-Kohäsion-Systems mit behördlichen Registern und anderen externen Systemen). |
| | ▪ Einrichtung von Schnittstellen mit externen Systemen, z. B. Behördenregistern, nationalen Datenbanken und anderen Diensten;<br>▪ Nutzung von statistischen Daten, Unternehmensdaten, Anschriften usw. |
| | **Lösungsvorschlag Nr. 1.2**: Harmonisierung und Vereinfachung von Konzepten (Namen, Definitionen, Beschreibungen), Strukturen (Rollen), Prozessen (Abläufe), Werkzeugen (Formulare, Vorlagen, Dokumentation) und Regeln (Geschäftslogik). |
| | ▪ Einheitliches Verwaltungs- und Kontrollsystem, andere Initiativen zur Standardisierung (z. B. HIT für Interreg-Programme);<br>▪ Standardisierte Namen, Definitionen, Rollen, Abläufe, Formulare, Vorlagen und Regeln. |
| | **Lösungsvorschlag Nr. 1.3**: Ausreichende Flexibilität für den Umgang mit programm- und anforderungsspezifischen Anforderungen. |
| | ▪ Mittel für mehr Flexibilität: Konfiguration, Plug-ins, Offenheit für Anpassungen und Erweiterungen;<br>▪ Unterschiede bei Regeln, Prozessen, Informationsabfragen bleiben bestehen. |

| | |
|---|---|
| | **Lösungsvorschlag Nr. 1.4**: Konzentration auf den Austausch und die Integration strukturierter Daten, nicht nur den Austausch unstrukturierter Dokumente (wie PDF-Dateien und andere Dokumente in Office-Formaten).<br>▪ Definition einheitlicher Datenstrukturen für alle Prozesse, Einrichtung von Schnittstellen (Austausch von Daten), die eine Synchronisation von Transaktionsdaten in Echtzeit ermöglichen;<br>▪ Nahtlose Verarbeitung, Verfügbarkeit. |
| **Herausforderung Nr. 2:** Komplexität und dynamische Veränderungen (Entwicklung und Pflege eines e-Kohäsion-Systems ist eine komplexe Aufgabe, die Fristen sind knapp und es müssen oft Anforderungen berücksichtigt werden, die erst spät im Entwicklungsprozess auftauchen). | **Lösungsvorschlag Nr. 2:** Entwicklung einer effizienten Lösung, die den Informationsaustausch für alle relevanten e-Kohäsion-Prozesse abdeckt.<br>▪ Es ist zu beachten, dass die Projektauswahl (Antrag) und die Umsetzung eng miteinander verknüpft sind;<br>▪ Angemessene Funktionen für Finanzierung (d. h. unterschiedliche Finanzierungsquelle und Änderungen der Finanzierungssätze im Verlauf des Projekts), Herausnahmen und Einziehungen;<br>▪ Möglichkeit zum Hochladen und Austauschen digitalisierter Nachweise, die für Überprüfungen und Kontrollen benötigt werden;<br>▪ Gute Kommunikationsfunktionen, die den Austausch per E-Mail ersetzen können;<br>▪ Einrichtung einer einzigen Anlaufstelle für den Austausch von Daten und Informationen. |
| **Herausforderung Nr. 3:** Steigende Erwartungen der Benutzer (mehr Erfahrung im Umgang mit dem jeweiligen System führt zu höheren Erwartungen, viel Kommunikation und dem Wunsch nach Zugang zu analytischen Daten und Funktionen). | **Lösungsvorschlag Nr. 3.1:** Benutzerzentrierter Ansatz, hohe Benutzerfreundlichkeit und Effizienz als Ziele.<br>▪ Entwicklung effizienter Prozesse, schneller Prozessdurchsatz und weniger Wiederholungen bei den Prozessen, die mit dem größten Verwaltungsaufwand verbunden sind;<br>▪ Priorität auf der Entwicklung der Funktionen, bei denen das Kosten-Nutzen-Verhältnis besonders günstig ist. Beteiligung möglichst vieler unterschiedlicher Benutzergruppen an der Entwicklung. Laufende Optimierung des Systems, Erfassung, Analyse und Berücksichtigung der Rückmeldungen der Benutzer auch im laufenden Betrieb;<br>▪ Mehr Benutzerfreundlichkeit durch eine Lösung mit klarer Struktur, die sich selbst erklärt und leicht zu navigieren ist. Angemessen Hilfefunktionen, Dokumentation und Support für Benutzer;<br>▪ Ausreichend Spielraum für Flexibilität, sodass die Benutzer die Prozesse in der Reihenfolge durchführen können, die ihren Bedürfnissen und Vorlieben entspricht.<br>**Lösungsvorschlag Nr. 3.2**: Exzellente Benutzerfreundlichkeit durch Funktionen, die den Nutzen des Systems optimieren.<br>▪ Es sollte gewährleistet sein, dass das System auch bei hohem Benutzeraufkommen schnell und zuverlässig funktioniert. Gegebenenfalls Nutzung einer cloud-basierten Server-Infrastruktur, die leicht skalierbar ist.<br>▪ Tool-Tipps, Eingabekontrolle und ähnliche Funktionen sollten die Benutzer sofort auf fehlende und falsche Werte hinweisen;<br>▪ Als Teil der automatischen Berechnungen sollten auch Pauschalen und Einheitssätze berechnet werden können. Zusätzliche Funktionen zur Berechnung von Personalkosten und Verwaltung von Beschaffungen.<br>▪ Zugang der Benutzer zu Bericht- und Analysefunktionen und projektübergreifenden analytischen Daten; |

| | |
|---|---|
| | ▪ Integrierter Zugang zu allen ausgetauschten Dokumenten und flexible Suchfunktionen, die eine Volltextsuche und die Anwendung Boole´scher Ausdrücke erlauben[16];<br>▪ Einrichtung einer speziellen Chat-Funktion für die Kommunikation mit allen Benutzergruppen, wenn nötig einschließlich von Behörden. |
| **Herausforderung Nr. 4::** Rechtliche Aspekte (Unsicherheit in Bezug auf technische Lösungen, die eine handschriftliche Signatur überflüssig machen, stellen für manche Entscheidungsträger immer noch ein Hindernis dar, auch zum Thema Datenschutz und DSGVO gibt es noch Unsicherheiten). | **Lösungsvorschlag Nr. 4: Gut durchdachte Systemfunktionen, die die Einhaltung gesetzlicher Vorschriften gewährleisten.**<br>▪ Eine benutzerfreundliche Funktion für elektronischen Signaturen, die handschriftliche Signaturen überflüssig macht;<br>▪ Funktion zur Bearbeitung und Archivierung unstrukturierter Nachweise und Dokumente;<br>▪ Gewährleistung der angemessenen technischen und organisatorischen Maßnahmen (Datensicherheit, Vertraulichkeit). |
| **Herausforderung Nr. 5:** Verfügbarkeit vielseitiger Mitarbeiter (sowohl IT-Kompetenz als auch Kenntnisse bei der Programmverwaltung). | **Lösungsvorschlag Nr. 5:** Aufbau von Teams mit einer guten Mischung von IT-Kompetenzen und Know-how zur Umsetzung von Förderprogrammen.<br>▪ Einsatz moderner Technologien;<br>▪ Umsetzung einer flexiblen IT-Architektur;<br>▪ Lernen aus früheren Fehlern, langfristige Strategie zum Aufbau wichtiger IT-Kompetenzen und praktischer Kenntnisse für die Umsetzung von Förderprogrammen;<br>▪ Evolutionäre und flexible Entwicklungsprozesse. |

[16] Ein Boole´scher Ausdruck ist eine Kombination mehrerer Suchkriterien mit UND und ODER. Dies ermöglicht flexible und spezifische Suchfunktionen.

# Résumé

# 1. Introduction

## Objectif et portée de l'évaluation

L'évaluation des systèmes d'e-Cohesion en 2014-2020 ont été un double objectif :

- Regard en arrière : récolter et fournir des informations à jour sur la mise en œuvre et la performance des systèmes d'e-Cohesion pendant la période de programmation 2014-2020, et également identifier les systèmes de bonne pratique qui pourraient inspirer la poursuite du développement des systèmes d'e-Cohesion dans d'autres États-Membres.
- Regard en avant : en s'appuyant sur les données récoltées, identifier les options et les voies possibles pour l'amélioration dans la période de programmation 2021-2027 pour s'assurer que les utilisateurs des systèmes d'e-Cohesion peuvent continuer d'exploiter au mieux le potentiel de simplification d'e-Cohesion.

En lien avec ce double objectif, il convient de souligner que l'objectif sous-jacent de l'évaluation est de permettre l'apprentissage des politiques.

L'évaluation couverts par les systèmes d'e-Cohesion qui ont été mis en place par les 27 États Membres pour les programmes opérationnels soutenus par le Fonds européen de développement régional (FEDER) et le Fond de Cohésion (FC) en 2014-2020, y compris les programmes sous l'objectif de coopération territorial (Interreg).

## Le concept d'e-Cohesion

Conformément à l'Article 122, paragraphe 3, de Règlement sur les dispositions communes (CPR 2014-2020)[17], les États Membres devraient s'assurer que tous les échanges d'informations entre les bénéficiaires des programmes de politique de cohésion et des autorités du programme doivent être effectués via les systèmes d'échange de données numériques. On appelle généralement ces systèmes, les systèmes d'e-Cohesion. Selon l'exigence réglementaire, les États Membres devraient fournir à leurs bénéficiaires (mais sans aucune obligation pour les bénéficiaires de les utiliser) un système leur permettant d'envoyer des informations sous forme électronique. En pratique, le système d'e-Cohesion fait généralement partie d'un système d'informations de gestion plus large exigé par le CPR pour la gestion d'un programme opérationnel (OP). Le système d'e-Cohesion (défini par l'Article 122, paragraphe 3)[18], sert de « bureau d'accueil », tandis que le système d'enregistrement et de stockage, sous forme informatisée, les données relatives à chaque opération qui sont nécessaires pour le suivi, l'évaluation, la gestion financière (définie par l'Article 125, paragraphe 2)[19] joue un rôle de « bureau d'accueil ».

La comparaison des dispositions du CPR 2014-2020 et du CPR 2021-2027 montrent une continuité dans les exigences d'e-Cohesion, sans aucun changement majeur introduit pour la période de programmation de 2021-2027.

[17] Règlement (UE) n° 1303/2013 du Parlement européen et du Conseil du 17 décembre 2013 portant dispositions communes sur le Fonds européen de développement régional, le Fonds social européen, le Fonds de cohésion, le Fonds européen agricole pour le développement rural et le Fonds européen pour la mer et la pêche, portant dispositions générales sur le Fonds européen de développement régional, le Fonds social européen, le Fonds de cohésion et le Fonds européen pour la mer et la pêche et abrogeant le règlement (CE) n° 1083/2006 du Conseil.

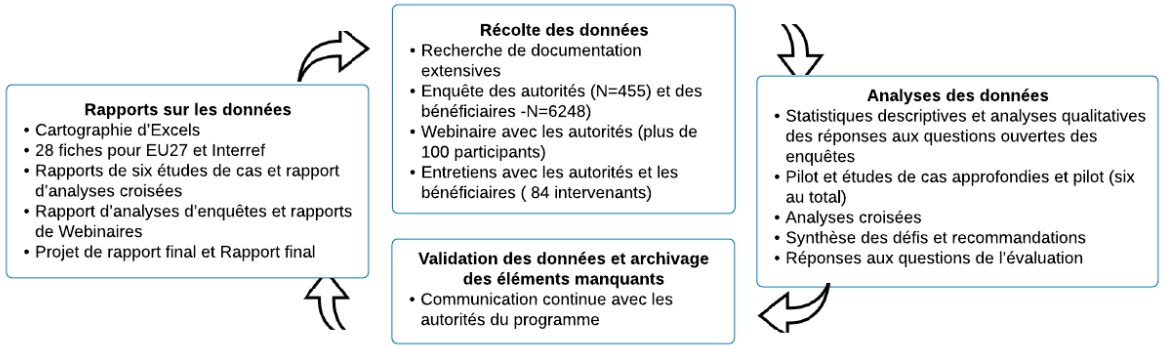
[18] Idem.

[19] Idem.

## Approche méthodologique et limites

L'évaluation s'est appuyée sur une méthode de recherche mixte, combinée avec des méthodes de recherche quantitatives et qualitatives pour répondre aux huit tâches spécifiques décrites dans les Spécifications de l'appel d'offres (TS). Étant donné que cette évaluation est la première tentative de cartographier les systèmes d'e-Cohésion dans une telle mesure, elle a dû s'appuyer fortement sur la collecte extensive de données primaires. L'évaluation employée dans une vaste recherche documentaire (p. ex. la recherche web, les analyses de documents disponibles sur la SFC2014, les sites web des autorités, les manuels d'utilisation, etc.) en tant que base fondamentale de la cartographie des systèmes et de leurs caractéristiques. Les enquêtes à grande échelle, les études de cas approfondies et les entretiens avec les autorités et les bénéficiaires du programme ont été mis en œuvre pour récolter des informations évaluatives sur e-Cohesion (pour compléter les informations factuelles récoltées via la recherche documentaire), et de recueillir l'opinion des bénéficiaires et des autorités sur le rapport entre l'e-Cohésion et le potentiel de simplification et de réduction de la charge administrative, ainsi que sur la convivialité et d'autres aspects liés aux critères d'évaluation. La collecte, l'analyse, la validation et la communication des données étaient des processus continus et, dans la plupart des cas, parallèles, mis en œuvre tout au long de l'évaluation.

**Les étapes de recherche**




*Source : préparé par l'équipe d'évaluation.*

# 2. Principales conclusions

## Principales conclusions

**E-Cohesion est largement appliqué. Nous avons défini 108 systèmes e-Cohesion, qui sont utilisés pour la grand majorité des programmes financés par le FEDER et le FC.** Sur les 302 PO analysés, seuls huit PO (quatre nationaux, quatre Interreg) ne disposent pas d'un système dédié à e-Cohesion.

**Les systèmes d'e-Cohesion en place répondent aux exigences principales fournies par les CPR et CIR[20] pour la période de programmation 2014-2020.** La plupart des systèmes d'e-Cohesion ont mis en place les fonctionnalités, processus, exigences de sécurité de données principaux et les principes d'e-Cohesion. Les résultats de nos enquêtes montrent que les systèmes sont largement utilisés, principalement pour les activités de mise en place de projet, notamment le traitement des demandes de paiement.

**La grande majorité des utilisateurs s'accordent sur le fait qu'utiliser les systèmes d'e-Cohesion représente une amélioration sous tous les aspects de l'échange d'information entre les bénéficiaires et les autorités du programme.** Environ 80% de tous les bénéficiaires et autorités conviennent que, par rapport aux processus sur papier ou aux échanges d'emails, l'échange de données via les systèmes de cohésion électronique a permis d'accélérer l'échange d'informations. De plus, plus de 80% de tous les bénéficiaires et autorités qui ont répondu à l'enquête ont vivement approuvé ou sont d'accord avec les

[20] Règlement d'exécution (UE) n°1011/2014 de la Commission du 22 septembre 2014 établissant les modalités d'application du règlement (UE) n° 1303/2013 du Parlement européen et du Conseil en ce qui concerne les modèles de présentation de certaines informations à la Commission et les modalités relatives aux échanges d'informations entre les bénéficiaires et les autorités de gestion, les autorités de certification, les autorités d'audit et les organismes intermédiaires.

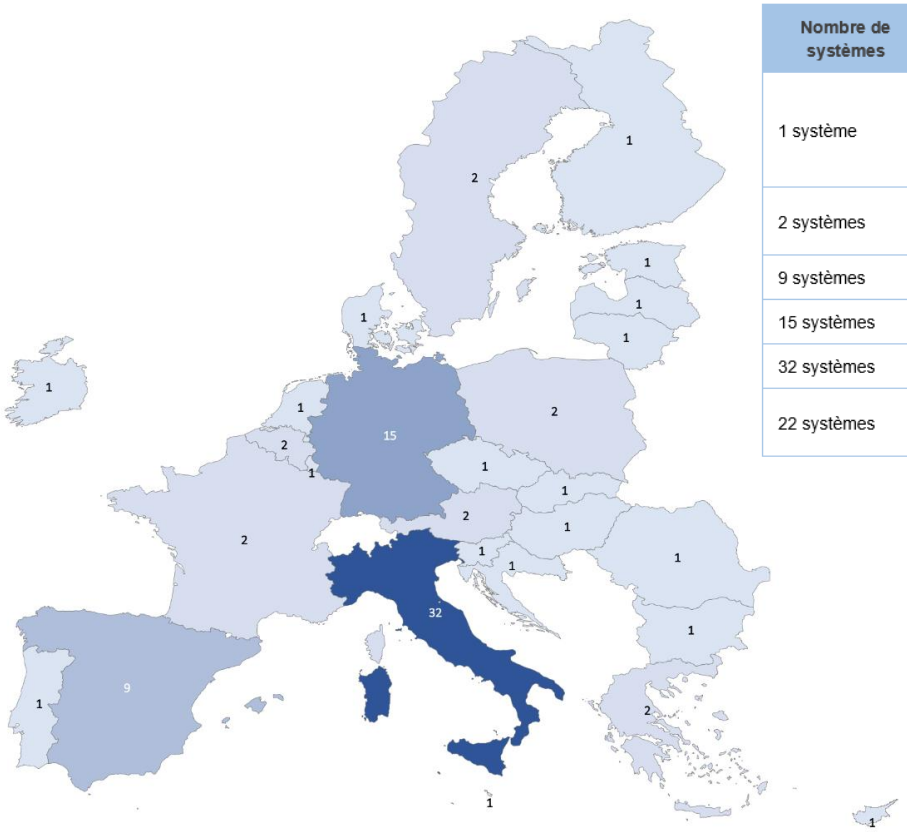
avantages d'e-Cohesion (p. ex. charge de travail administratif réduit, procédures simplifiées, etc.) dépassant tous les coûts associés à l'utilisation du système (p. ex. aspects chronophages ou financiers) en lien avec tous les processus clés.

**Il n'en reste pas moins que quelques défis subsistent pour s'assurer que les utilisateurs tirent pleinement profit des avantages d'e-Cohesion**, à des degrés divers, des échanges parallèles d'informations ont encore lieu (utilisation de messagerie électronique, papier, etc.), notamment en ce qui concerne les informations liées aux activités d'audit comme les vérifications de la direction et les contrôles sur place. L'extension de l'interopérabilité au-delà du niveau du programme, au niveau national et européen, est un autre domaine d'amélioration essentiel. Selon les autorités qui répondent à notre enquête, la mise en place des interconnexions entre les applications externes, les registres et les bases de données, représentent le défi le plus important de la période de programmation 2021-2027.

## Cartographie du paysage des systèmes d'e-Cohesion

Au total, l'évaluation a cartographié 108 systèmes d'e-Cohesion, couvrant les 27 États Membres, y compris les programmes Interreg. Sur ces 108 systèmes, 75 systèmes sont utilisés uniquement pour les OP nationaux/régionaux, 11 sont utilisés pour les OP nationaux/régionaux et les programmes Interreg, et 22 systèmes sont utilisés seulement pour Interreg. Nous avons identifié que tous les États Membres possèdent les systèmes d'e-Cohesion. Une majorité d'États membres (18 d'entre eux) ont un seul système d'e-Cohesion pour gérer les interventions FEDER et FC, et possèdent donc une structure d'e-Cohesion centralisée. Il s'agit l'approche la plus utilisée. Il existe aussi des pays avec une approche décentralisée d'e-Cohesion, dans laquelle chaque (ou quelques) régions/OPs a ont ses son propres systèmes d'e-Cohesion. Le graphique suivant illustre le nombre de systèmes de cohésion électronique identifiés par pays.

**Nombre de systèmes d'e-Cohesion identifies par pays pour 2014-2020 (sauf les systèmes d'Interreg uniquement)**




| Nombre de systèmes | Pays |
|---|---|
| 1 système | BG HR CY CZ DK EE FI HU IE LV LT LU MT NL PT RO SK SI |
| 2 systèmes | AT BE FR EL PL SE |
| 9 systèmes | ES |
| 15 systèmes | DE |
| 32 systèmes | IT |
| 22 systèmes | Systèmes Interreg uniquement |

*Source : préparé par l'équipe d'évaluation utilisant Geonames*

## Pertinence

*La pertinence, dans le contexte d'e-Cohesion, est définie comme la mesure dans laquelle les objectifs d'initiative d'e-Cohesion sont pertinents pour les priorités et les besoins politiques auxquels sont confrontés les groupes cibles de l'intervention.*

Les systèmes d'e-Cohension sont largement pertinents pour tous les groupes d'utilisateurs institutionnels, mais l'étendue de leur pertinence varie entre les différents types d'utilisateurs. Les systèmes sont parfois moins pertinents pour les autorités d'audit (AA) comparé aux autres groupes d'utilisateurs institutionnels. Les résultats de l'enquête suggèrent que certains systèmes ne fournissent pas les caractéristiques nécessaires aux AA pour accomplir leurs tâches : presque 60% des AA interrogés disent que les systèmes ne fournissent pas les fonctionnalités suffisantes pour communiquer avec les bénéficiaires, et plus de 60% échangent certaines informations en dehors du système lors de la planification et de la mise en œuvre des activités d'audit. De plus, tandis que la majorité des systèmes d'e-Cohesion soutiennent tous les processus clés, la mesure dans laquelle les systèmes sont utilisés en relation avec ces processus varie. Les systèmes sont surtout utilisés pour échanger des informations relatives aux demandes de paiement et aux rapports d'avancement. Les bénéficiaires utilisent toujours d'autres canaux (p. ex. emails) pour échanger des données en lien avec les processus tels que la signature des contrats et l'échange de documents pour les contrôles/vérifications, ainsi que la communication *ad hoc*. Cela est dû à l'absence de caractéristiques techniques dans les systèmes d'e-Cohesions et de cadres juridiques nationaux de soutien.

Les caractéristiques et les fonctionnalités qui peuvent améliorer ou entraver la pertinence des systèmes de leurs utilisateurs sont identifiés et analysés par les autorités responsables à travers la récolte des commentaires utilisateurs. La plupart des systèmes d'e-Cohesion récoltent les commentaires utilisateurs pour continuer à adapter les besoins changeants des intervenants. De plus, nos résultats suggèrent une corrélation entre l'attention portée aux commentaires des utilisateurs et la perception de la convivialité et de l'utilité des systèmes.

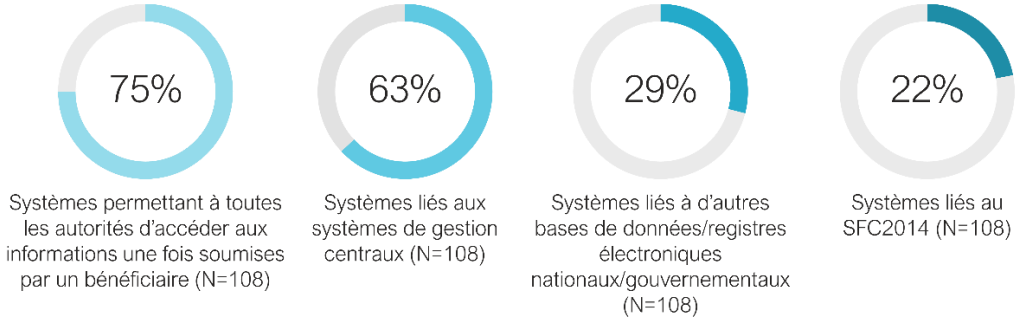
## Cohérence

*La cohérence dans le contexte d'e-Cohesion est définie en tant qu'alignement entre les autorités et les systèmes différents pour l'échange électronique d'informations dans l'objectif de la mise en place de la politique de cohésion de l'Union Européenne. La cohérence est fortement reliée à l'interopérabilité, et se réfère donc au niveau de programme, p. ex., la mesure dans laquelle les autorités chargées des programmes ont des droits d'accès au système et aux données partagées entre eux. Comme l'interopérabilité, le concept de cohérence peut être étendu au niveau national et au niveau européen. Cela signifie d'avoir une cohérence interne, p. ex., l'interconnexion du système d'e-Cohesion pour d'autres systèmes électroniques publics, registres, et bases de données dans l'état membre. Cela signifie également d'avoir une cohérence externe, p. ex., l'interconnexion des systèmes d'e-Cohesion au SFC 2014 ainsi que tout autre système pertinent tels que keep.eu (pour les programmes Interreg).*

Dans l'ensemble des systèmes d'e-Cohésion identifiés, il y a un haut niveau de cohérence sur le niveau du programme. Presque tous les systèmes accordent aux autorités chargées des programmes des droits d'accès au système, ce qui leur permet d'accéder aux données soumises par les bénéficiaires et de les partager entre elles. La cohérence interne et externe aux niveaux nationaux et européens, respectivement, sont moins développés que la cohérence au niveau du programme. Il est plus commun pour les systèmes d'e-Cohesion d'être être plus cohérents à l'intérieur qu'à l'extérieur. En se basant sur notre carte des systèmes, presque un tier des systèmes d'e-Cohesion identifiés (31 sur 108) sont liés à d'autres registres/bases de données électroniques gouvernementales/nationales, et le numéro correspondant pour les systèmes de gestion central est presque de deux tiers (68

sur 108). Environ un cinquième (24 sur 108) des systèmes identifiés sont relié au SFC, et seulement pour un seul système il était indiqué qu'il est relié au keep.eu. À noter qu'il y avait une certaine incongruité entre les résultats de l'enquête et les données cartographiées, mais les tendances générales demeurent. La cohérence interne et externe sont des domaines qui méritent d'être améliorés. Les interconnexions entre les systèmes informatises au niveau national et européen restent un des défis clés car il facilite grandement le processus de soumission et réduit le risque d'erreurs.

Pourcentage des systèmes et de leur interopérabilité sur le programme au niveau national et européen.




*Source : préparé par l'équipe d'évaluation, sur la base des données cartographiques.*

## Efficacité

*L'efficacité fait référence à la mesure dans laquelle les objectifs et les résultats escomptés sont atteints. Notre analyse a pour objectif de déterminer si les systèmes de cohésion électronique contiennent les fonctionnalités requises, s'ils couvrent les principes et processus clés et s'ils sont perçus par les utilisateurs comme ayant apporté la simplification, la réduction des coûts administratifs et des charges administratives attendues.*

L'évaluation de l'efficacité a été guidée par les dispositions définies du CPR 2014-2020 et le Règlement d'application. Ceux-ci sont structurés et évalués en fonction des principes, processus et fonctionnalités clés, ainsi que des exigences en matière de sécurité des données.

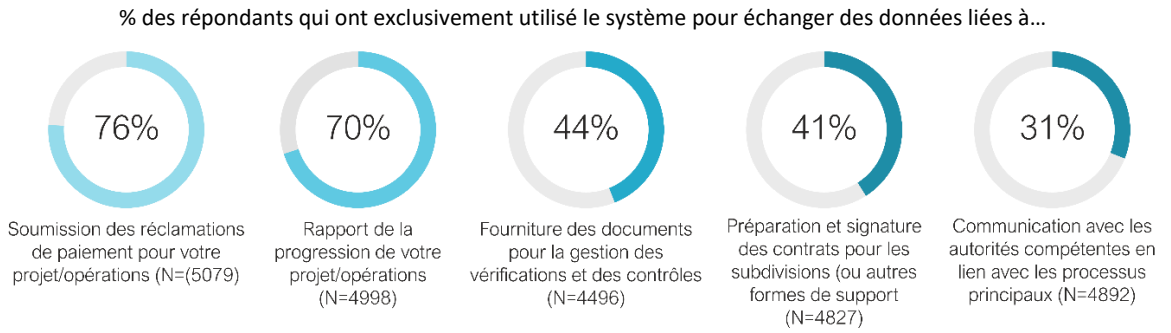
**Exigences principales d'e-Cohesion**

| Processus principaux | Principes principaux | Fonctionnalités principales | Exigences de sécurité des données |
|---|---|---|---|
| Rapports d'avancement ; demandes de paiement ; échange d'informations relatives aux audits et aux vérifications de gestion. En outre, l'évaluation a porté sur le processus de demande. | Interopérabilité (c'est-à-dire l'interconnexion des systèmes informatisés) ; encodage unique (c'est-à-dire que le bénéficiaire ne doit soumettre la même information qu'une seule fois) | Formulaires interactifs ; calculs automatiques ; contrôles automatiques intégrés ; alertes générées par le système ; suivi de l'état en ligne ; disponibilité des informations traitées précédemment. | Garantir la sécurité, l'intégrité et la confidentialité des données au moyen de fonctions de cryptage, de contrôle d'accès sous forme d'authentification et d'autorisation, et mettre en place un processus défini de gestion des incidents en cas de problème technique ou de perturbation. |

*Source : préparé par l'équipe d'évaluation.*

La plupart des systèmes respectent, à une grande mesure, aux principes principaux, et ont mis en œuvre les fonctionnalités nécessaires. Bien que les exigences en matière de sécurité des données soient difficiles à évaluer en raison de l'absence de données accessibles au public sur les caractéristiques techniques, les résultats de notre enquête indiquent que 90 % des personnes interrogées conviennent que l'intégrité et la qualité des données, ainsi que la sécurité et la confidentialité des données, se sont considérablement améliorées grâce à l'introduction des systèmes de cohésion électronique. Cependant, tandis que la plupart des systèmes soutiennent tous les processus principaux, et même

vont au-delà, en soutenant le processus d'application, qui n'est pas requis par le CPF 2014-2020, les canaux parallèles pour l'échange de données sont toujours utilisés à travers leur mise en œuvre. La mesure dans laquelle les canaux parallèles d'échange de données sont utilisés pour les rapports d'avancement et les demandes de paiement est limitée. Néanmoins, les canaux parallèles (principalement les courriers électroniques) sont largement utilisés pour l'échange de données relatives aux audits et aux vérifications de gestion.



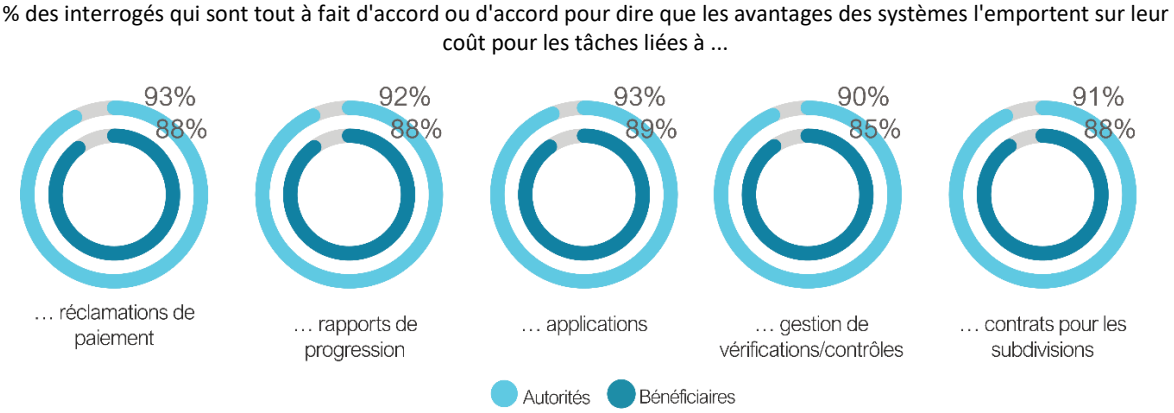

*Source : préparé par l'équipe d'évaluation sur la base de l'enquête auprès des bénéficiaires - Q.12 « Lors de la mise en œuvre de votre projet/opération, dans quelle mesure avez-vous utilisé le système d'échange de données électroniques indiqué pour les processus suivants : »*

Malgré l'utilisation des canaux parallèles pour la transmission de l'échange des données en lien avec certains processus principaux, les résultats ont clairement montré que l'introduction et l'utilisation des systèmes d'e-Cohesion ont conduits à des simplifications du point de vue des bénéficiaires et des autorités. Les améliorations principales sont liées à la gestion des données simplifiées, l'accessibilité, la transparence, la qualité et l'intégrité.

## Rendement

*Le rendement, dans le contexte d'e-Cohesion, considère d'abord les avantages ou les résultats de la mise en œuvre des systèmes d'e-Cohesion (p. ex. la réduction des charges administratives et simplification des procédures) comparé aux coûts liés à leur déploiement et à leur exploitation.*

Dans tous les aspects de la gestion du programme, l'introduction des systèmes d'e-Cohesion ont eu pour résultat des gains importants en termes de ressources et de temps pour la majorité des utilisateurs (comparé aux processus papiers) et dépassent largement les coûts de mise en œuvre/utilisation des systèmes d'e-Cohesion. Cela indique un haut degré d'efficacité lors de l'évaluation de l'impact des systèmes d'e-Cohesion pendant l'application et la mise en œuvre du projet.




*Source : préparé par l'équipe d'évaluation sur la base de l'enquête auprès des autorités - Q.23 et de l'enquête auprès des bénéficiaires - Q.15 « Veuillez évaluer l'affirmation suivante : les avantages (par exemple, la réduction de la charge administrative, la simplification des procédures) de l'introduction du système d'échange de données électroniques entre les bénéficiaires et les autorités dépassent les coûts associés (par exemple, le temps et l'effort nécessaires pour l'utiliser) pour les processus suivants : »*

De plus, l'évaluation des résultats suggère qu'une approche de développement évolutionnaire et continu représente un facteur de réussite primordial pour le fonctionnement efficace des systèmes d'e-Cohésion, qui peut minimiser les efforts lors de leur introduction et de leur fonctionnement.

Tandis que l'évaluation ne peut pas clairement identifier un processus principal qui demande beaucoup d'effort des utilisateurs des systèmes d'e-Cohesion, la soumission et le contrôle des demandes de paiement sont considérés comme un processus essentiel pour les autorités et les bénéficiaires. De plus, la maximisation du soutien des systèmes pour ce processus pourrait davantage augmenter leur valeur et leur rendement. Parmi les barrières affectant le fonctionnement du rendement des systèmes d'e-Cohesion, l'interopérabilité limitée représente un problème fondamental. De plus, un manque d'harmonisation et de simplification peut être soulevé comme un défi primordial affectant plusieurs domaines d'e-Cohesion, ce qui entraîne des charges à la fois pour les autorités et les bénéficiaires.

### Valeur ajoutée de l'Union Européenne

*Le critère de la valeur ajoutée de l'UE permet de déterminer si l'initiative e-Cohésion, telle qu'elle est décrite dans le RPC et le règlement d'application, a contribué au développement ou à l'amélioration des systèmes nationaux/régionaux d'échange de données électroniques, ou a entraîné des retombées plus larges.*

Les aspects principaux de la valeur ajoutée de l'UE des systèmes de e-Cohesion comprennent : l'introduction de certains systèmes d'e-Cohesion dans les États Membres où ils n'existaient pas auparavant, ainsi que les contributions d'améliorations continues des systèmes existants. Ce dernier point est, selon nos conclusions, le résultat le plus courant de l'e-Cohésion. D'autres aspects de la valeur ajoutée de l'UE sont l'utilisation et la couverture accrues des systèmes de cohésion en ligne et les effets d'entraînement positifs dans d'autres contextes politiques, avec le développement de systèmes d'échange de données électroniques pour prendre en compte les fonds et les programmes nationaux/régionaux ainsi que d'autres fonds et programmes de l'UE.

### Facilité d'utilisation

*La facilité d'utilisation fait référence à la mesure dans laquelle les systèmes d'e-Cohesion sont perçus comme suffisamment intuitifs, facile à utiliser, auto-descriptif, interactifs, attrayants, rapides, et maximisent également la valeur de leurs utilisateurs lors du traitement de l'échange et de la gestion des données, des documents et des informations.*

En général, les systèmes d'e-Cohesion présentent un haut degré de clarté, de facilité d'utilisation et d'autodescription. Cependant, la variation notable demeure entre les différents systèmes. Tous les systèmes ne répondent pas systématiquement à tous les besoins de leurs utilisateurs. Concernant, les systèmes d'e-Cohesion, les utilisateurs s'accordent majoritairement pour dire qu'avec le temps et l'expérience, les systèmes d'e-Cohesion les aident à effectuer des tâches plus efficacement. Presque tous les systèmes d'e-Cohesion supportent toutes les fonctionnalités clés étroitement associées à la convivialité, et les utilisateurs en sont globalement très satisfaits. En particulier, la fourniture de signatures électroniques a le potentiel de réduire considérablement les charges administratives en permettant des processus entièrement sans papier.

De plus, la satisfaction avec les caractéristiques du support des systèmes d'e-Cohesion est répandu, malgré quelques mises en garde. Les fonctionnalités d'aide et les services d'assistance sont bien mis en œuvre et répondent largement aux besoins des bénéficiaires et des utilisateurs institutionnels. Ces deux fonctionnalités peuvent répondre à des besoins allant au-delà de l'assistance, comme l'amélioration de la communication entre les autorités et les bénéficiaires et la contribution au développement du système.

### Aperçu général constituant un bon système d'e-Cohesion

En s'appuyant sur l'analyse croisée de six études de cas approfondies, chacun d'entre eux se concentre sur un système d'e-Cohésion sélectionnés[21]. Le tableau suivant fournit un aperçu général des enseignements tirés de l'expérience en ce qui concerne les aspects sur lesquels il convient de se concentrer lors de l'élaboration et du maintien d'un système de cohésion électronique efficace.

**Aspect primaires et actions associées pour un système d'e-Cohesion réussi**

| Aspect | Action |
|---|---|
| **Développement** | ▪ Approche de développement évolutionnaire, caractérisé par un haut degré de création de prototypes, d'améliorations continues et de sorties fréquentes de nouvelles versions.<br>▪ Approche centrée sur l'utilisateur, récolte systématique de commentaire d'utilisateurs, amélioration utilisateur lors de tests des prototypes pour de nouvelles caractéristiques, considération des besoins d'utilisateurs.<br>▪ Équipe de développement versatile, la combinaison des compétences informatiques (peut impliquer l'acquisition d'un développeur de logiciels privé) et la connaissance d'une mise en place d'un programme. |
| **Aspects légaux** | ▪ Élimination des processus parallèles papiers, en rendant obligatoire l'utilisation du système ou l'unique solution officielle. Cela élimine la nécessité de maintenir des processus parallèles, et incite les autorités à fournir des solutions d'une grande facilité d'utilisation. |
| **Exigences clés** | ▪ Soutenir l'échange de données structurées, le simple téléchargement de données non structurées (par exemple, des formulaires sous forme de fichiers PDF) empêche tout traitement ultérieur des données.<br>▪ Centralisation des données, en soutenant les processus principaux (y compris ceux qui ne sont pas encore décrites dans les exigences minimales, par exemple les applications, les demandes de modification et les fonctions de communication), toutes les informations relatives au projet sont accessibles de manière centralisée en un seul endroit.<br>▪ Interopérabilité au-delà du niveau du programme, permettant de réaliser un encodage unique, ainsi que l'extraction et la vérification d'informations à plus grande échelle. |
| **Utilité** | ▪ Fourniture d'une fonction intégrée de signature électronique, offreant l'avantage de processus entièrement dématérialisés qui réduisent les efforts requis pour le transport et le stockage.<br>▪ Prise en charge des processus qui demandent le plus d'efforts, offrant un soutien efficace aux activités qui, autrement, représenteraient la plus grande charge administrative (saisie des dépenses, traitement des pièces justificatives).<br>▪ Offre de la flexibilité, les utilisateurs peuvent accomplir les tâches selon leurs préférences. |
| **Facilité d'utilisation** | ▪ Fonctionnalités d'aide et d'auto-description, étant donné que la plupart des bénéficiaires n'utilisent pas souvent le système, des fonctionnalités telles que des conseils d'utilisation, etc. aident les utilisateurs à naviguer dans le système.<br>▪ Validation et calculs automatiques intégrés, permettant de vérifier les informations et de réduire les taux d'erreur, ce qui réduit les charges administratives tant pour les bénéficiaires que pour les utilisateurs institutionnels.<br>▪ Fourniture des performances et une stabilité appropriées, disposition de capacités de serveur appropriées pour fournir un temps de réponse suffisant. |

*Source : préparé par l'équipe d'évaluation.*

# 3. Défis et potentielles solutions

L'évaluation se termine par des conclusions sur les défis à relever pour assurer une mise en œuvre et un fonctionnement efficace des systèmes d'e-Cohesion, et sur la manière dont ils peuvent être traités. Ainsi, chaque défi identifié est accompagné d'une solution potentielle spécifique (ou d'une série de solutions potentielles) adressée principalement aux autorités responsables de la mise en œuvre des systèmes d'e-Cohesion. En dessous de chaque solution potentielle sont données quelques précisions sur ce qu'elle implique.

[21] MIS (Greece), e-Toetus (Estonia), e-MS (Interreg), SFINGE2020 (Italy SL2014), (Poland), Balcão2020 (Portugal).

| | |
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| **Défi n°1 :** S'assurer l'efficacité de l'interopérabilité avec d'autres systèmes et registres (la remise en question de la normalisation et de l'harmonisation jusqu'à un certain point ; la remise en question de la connectivité des solutions d'interface). | **Solution potentielle n°1.1 :** Viser à établir un encodage unique au niveau des systèmes (connecter le système e-Cohesion à des systèmes externes tels que les registres gouvernementaux). |
| | ▪ Établir des connexions d'interface avec des systèmes externes, par exemple des registres gouvernementaux, des bases de données nationales, d'autres services ;<br>▪ Utiliser les statistiques, les informations commerciales, les adresses, etc. fournies. |
| | **Solution potentielle n°1.2**: Harmoniser et simplifier les concepts (noms, définitions, descriptions) ; les structures (rôles) ; les processus (flux de travail) ; les outils (formulaires, modèles, documentation) ; et les règles (logique commerciale). |
| | ▪ Système de gestion et de contrôle unifié ; autres initiatives visant à coordonner la normalisation (comme les TIH développés pour les programmes Interreg) ;<br>▪ Noms, définitions, rôles, flux de travail, formulaires, modèles et règles normalisés. |
| | **Solution potentielle n°1.3** : Offrir suffisamment de flexibilité pour répondre aux exigences spécifiques des programmes et des appels. |
| | ▪ Moyens de flexibilité : configuration, plug-ins, ouverture aux adaptations et extensions ;<br>▪ Les différences qui subsistent concernent les règles, les processus et les demandes d'information. |
| | **Solution potentielle n°1.4** : Se concentrer sur l'échange et l'intégration de données structurées ; ne pas se contenter de considérer l'échange de documents non structurés (tels que les fichiers pdf et autres documents de bureau). |
| | ▪ Définir le schéma de données en croisant les processus ; interfaces (échange d'enregistrements de données) permettant la synchronisation en temps réel des données transactionnelles ;<br>▪ Traitement sans faille, accessibilité. |
| **Défi n°2 :** Complexité et changement dynamique (le développement et la maintenance d'un système d'e-Cohesion est une tâche complexe, qui exige le respect de délais et la prise en compte d'exigences qui surviennent tardivement dans le processus de développement). | **Solution potentielle n°2 : F**ournir une solution efficace qui couvre tous les processus d'échange d'informations pertinents pour l'e-Cohésion. |
| | ▪ Ne pas oublier que la sélection du projet (demande) et la mise en œuvre sont fortement liées ;<br>▪ Couvrir le financement (c'est-à-dire les différentes sources de financement et les changements de taux de financement pendant la réalisation du projet), les retraits et les recouvrements de manière appropriée ;<br>▪ Offrir la possibilité de télécharger et d'échanger des pièces justificatives numérisées, car celles-ci sont nécessaires pour la vérification et les audits ;<br>▪ Fournir des fonctions de communication puissantes pour remplacer les échanges par courrier électronique ;<br>▪ Établir un point d'échange unique pour les données et les informations. |
| **Défi n°3 : A**attentes croissantes de la part | **Solution potentielle n°3.1 : Être** centré sur l'utilisateur, viser une convivialité et une efficacité élevées. |

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| des utilisateurs (l'amélioration des compétences en matière d'utilisation des systèmes respectifs se traduit également par des attentes plus élevées, beaucoup de communication et une demande d'accès aux données et aux fonctionnalités analytiques).. | ▪ Augmenter l'efficacité des processus, accélérer leur déroulement et réduire les répétitions pour les processus qui occasionnent le plus de charges administratives ;<br>▪ Donner la priorité au développement des fonctionnalités souhaitées en fonction des coûts et des avantages. Impliquer les utilisateurs de tous types dans le développement. Apporter des améliorations continues, recueillir, analyser et prendre en compte les commentaires des utilisateurs, y compris pendant les périodes de fonctionnement habituelles ;<br>▪ Augmenter la convivialité en proposant une solution dotée d'une structure claire, d'un haut degré d'auto description et d'une navigation facile. Proposez une fonctionnalité d'aide, une documentation et un support utilisateurs appropriés ;<br>▪ Offrir une marge de manœuvre suffisante pour que les utilisateurs puissent exécuter les actions dans l'ordre qui correspond à leurs besoins et à leurs préférences. |
| | **Solution potentielle n°3.2** : Viser une excellente expérience utilisateur en offrant les fonctionnalités qui maximisent les avantages pour les utilisateurs. |
| | ▪ Veiller à ce que le système offre des performances et une stabilité appropriée en période de trafic élevé. Envisager d'utiliser des infrastructures de serveurs basées sur le cloud qui offrent une grande évolutivité ;<br>▪ Prévoir des fonctionnalités telles que des conseils d'utilisation et des contrôles de validation côté client qui offrent aux utilisateurs un retour d'information immédiat sur les valeurs manquantes ou erronées ;<br>▪ Introduire le calcul des montants forfaitaires et des taux forfaitaires dans le cadre des calculs automatiques. Fournir également un support pour le calcul des coûts du personnel et la gestion des achats ;<br>▪ Fournir aux bénéficiaires des fonctions de rapport et d'analyse et un accès à des informations analytiques transversales aux projets ;<br>▪ Fournir un accès intégré à tous les documents échangés, ainsi que des fonctionnalités de recherche flexibles, permettant la recherche en texte intégral et l'application d'expressions booléennes[22] ;<br>▪ Mettre en place une fonction de chat dédiée pour communiquer avec toutes les catégories d'utilisateurs, y compris les autorités, en cas de besoin. |
| **Défi n°4 :** Aspects juridiques (les incertitudes concernant la mise en œuvre de solutions techniques pour remplacer la nécessité des signatures manuscrites représentent toujours un obstacle pour certains décideurs ; des incertitudes existent également en ce qui concerne la | **Solution potentielle n°4 : Fournir des fonctionnalités système puissantes pour assurer la conformité légale.** |
| | ▪ Fournir une fonction de signature électronique facile à utiliser pour remplacer les signatures manuscrites ;<br>▪ Fournir une fonctionnalité pour le traitement et l'archivage des pièces justificatives non structurées ;<br>▪ Appliquer des mesures techniques et organisationnelles appropriées (sécurité des données, confidentialité). |

[22] Une expression booléenne est une combinaison de différents critères de recherche avec des connexions AND et OR. Permet d'obtenir des fonctions de recherche flexibles et spécifiques.

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| confidentialité des données et le GDPR). | |

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| **Défi n°5 :** Disponibilité d'un personnel polyvalent (exigeant à la fois des compétences informatiques et une connaissance de la mise en œuvre des programmes). | **Solution potentielle n°5 :** Viser une combinaison appropriée de compétences informatiques et de connaissances de la mise en œuvre du programme.<br>▪ Utiliser les technologies de pointe ;<br>▪ Mettre en œuvre une architecture informatique flexible ;<br>▪ Tirer les leçons de l'expérience ; suivre une stratégie à long terme pour renforcer les compétences informatiques essentielles et les connaissances commerciales de la mise en œuvre du programme.;<br>▪ Suivre une approche de développement évolutive et agile. |

# Introduction

This Final Report was prepared as a result of the evaluation 'Evaluation of e-Cohesion 2014-2020)' (specific contract No 2019CE16BAT139). The evaluation was carried out by a consortium led by PPMI Group, in cooperation with rechenwerk GmbH and Ismeri Europa Srl. The project began in November 2020 and was completed in March 2022.

The Final Report of the evaluation was prepared on the basis of the requirements set out in the Tender Specifications (TS), the information gathered and analysed during the execution of the project, as well as the comments provided by the Interservice Steering Group representing the Client (both written and during the project meetings).

The Final Report presents the evaluation results, key remaining challenges and potential solutions to tackle these challenges. The report is divided into the following parts:

- **Part 1:** Objectives and methodology of the evaluation
- **Part 2:** e-Cohesion – discussing the concept and presenting the intervention logic
- **Part 3:** The landscape of e-Cohesion systems
- **Part 4:** Key findings
- **Part 5:** Key challenges and potential solutions to address them

In addition, **several annexes** are attached as integral parts of this Report or are submitted as accompanying separate files.

# 1. Objectives and methodology of the evaluation

## 1.1. Evaluation objectives and scope

The concept of e-Cohesion, as outlined in Article 122(3) of the Common Provisions Regulation (CPR 2014-2020)[23], concerns the electronic exchange of information between beneficiaries of Cohesion policy programmes and programme authorities during the 2014-2020 programming period. According to the regulatory requirement, Member States should provide their beneficiaries with (but not oblige them to use) a system to allow the submission of information in electronic form. To reduce the administrative burden, it is beneficial to exchange information between beneficiaries and the authorities designated to manage and oversee Operational Programmes (OPs) funded by European structural investment funds (ESIF) through the use of electronic systems for data exchange. The latter authorities include managing authorities (MA), intermediate bodies (IB), certifying authorities (CA) and audit authorities (AA). Electronic exchange of information between beneficiaries and programme authorities continues to be a requirement outlined in the CPR for the 2021-2027 programming period.

The evaluation covered the e-Cohesion systems set up in all 27 Member States for Operational Programmes supported by the ERDF and CF during the period 2014-2020, including programmes under the territorial cooperation objective (Interreg). For the complete list of programmes targeted by the evaluation, please see Annex 1.2.

The evaluation had a **twofold objective**:

1. **Looking back**: to collect and provide up-to-date information on the implementation and performance of e-Cohesion systems during the 2014-2020 programming period, and to identify good practice systems that could help to inspire the further development of e-Cohesion systems in other Member States. To enhance the possible learning effect, the evaluation also seeks to identify the challenges and difficulties encountered by the Member States in setting up e-Cohesion systems.

2. **Looking forward**: building on the data collected, to identify options for possible avenues for improvement to ensure that the users of e-Cohesion systems can make the most of the simplification potential of e-Cohesion.

In light of this twofold objective of the evaluation, it should be emphasised that the **underlying purpose of the evaluation is to enable policy learning**. While one of the objectives of the evaluation is to map the e-Cohesion systems and identify any that are missing, it is not a compliance-checking exercise – i.e. it is not an audit that checks compliance with legal provisions.

To achieve these objectives, the Tender Specifications (in the TS) provided a sequence of eight tasks, described in detail in the methodological section below. The evaluation relied on a **mixed-methods research design to address these eight tasks**, which combined qualitative and quantitative research methods. As presented in Table 1 below, the evaluation employed desk research, which informed (in combination with other methods)

[23] Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006

Task 1, Task 2, Task 3 and Task 5. Extensive interview and survey programmes were implemented to complement the factual information collected via desk research, and to gather the attitudes of beneficiaries and authorities on the relation between e-Cohesion and administrative burden, as well as user-friendliness and other aspects relating to the evaluation criteria. In other words, the **desk research aimed to collect available factual information on e-Cohesion systems. In contrast, the interviews and surveys complemented this factual data and provided more insights into the quality of e-Cohesion systems**. However, as described in Section 1.3, which outlines the challenges and limitations involved in the data collection and the evaluation overall, the evaluation team faced a considerable challenge in carrying out the desk research, due the limited availability of publicly accessible information on e-Cohesion systems.

**Table 1. Evaluation tasks and coverage of data collection and analysis methods**

| | Desk research | Interviews | Surveys | Case studies | Cross-case analysis | Synthesis and triangulation |
|---|---|---|---|---|---|---|
| Task 1 – Finalisation of methodology and presentation of the Inception Report | x | | | | | |
| Task 2 – Mapping of e-Cohesion systems | x | | x | | | |
| Task 3 – Preparation of two pilot case studies of good practices | x | x | | x | | |
| Task 4 – Surveys of authorities and beneficiaries | | | x | | | |
| Task 5 – In-depth analysis of selected systems – additional good-practice case studies | x | x | x | x | x | |
| Task 6 – Analysis of changes needed in the future – potential solutions for the remaining challenges in implementing e-Cohesion | | | | | | x |
| Task 7 – draft Final Report | | | | | | x |
| Task 8 – Final Report | | | | | | x |

*Source: prepared by the evaluation team.*

## 1.2. Methodology of the evaluation

This chapter provides a brief overview of the methodology that guided the evaluation. The overall analytical framework, in the form of the intervention logic, is presented in Section 2 below. The current section focuses on how the data were collected and analysed.

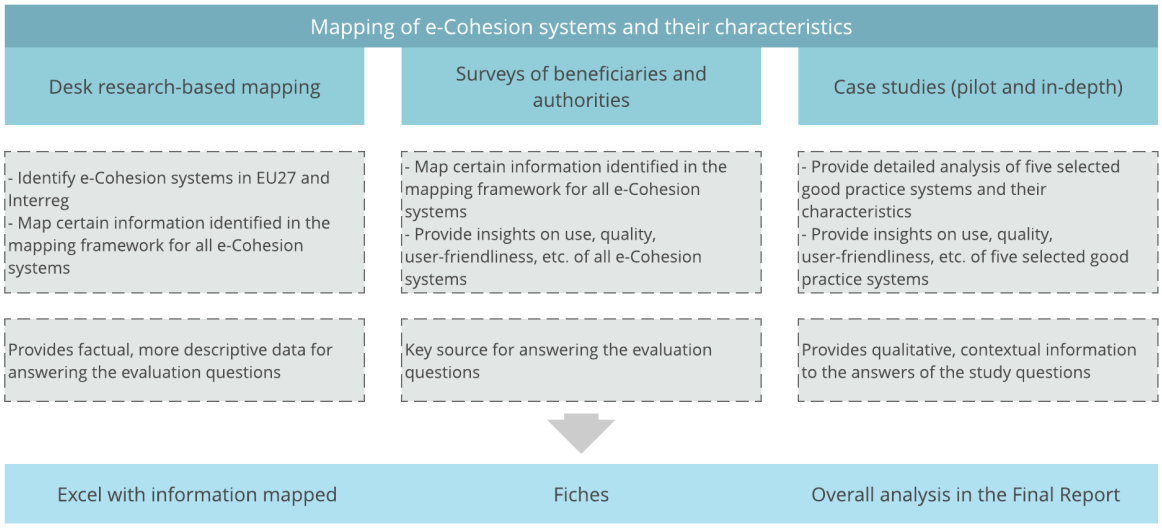
### 1.2.1. Mapping of e-Cohesion systems

This assignment included the comprehensive gathering of information on the situation with regard to e-Cohesion in each Member State, at the level of Operational Programmes. The initial mapping, based on desk research, that was carried out during the inception phase revealed that only some of the information included in our mapping framework would be accessible via the desk research (web search and the review of various information sources

available online). Thus, the mapping of e-Cohesion systems and their characteristics had to rely on a **mixture of data collection methods**. As identified in our mapping framework below, the collection of information about and analysis of e-Cohesion systems **was a continuous and gradual process** informed by desk research, surveys of beneficiaries and authorities, and case studies. In addition, **continuous communication took place with authorities to clarify the information collected** through these methods, and try to further fill in the gaps in the data to the extent possible.

Figure 1 below illustrates the overall logic of the mapping exercise. All of this information was eventually summarised in an Excel file that gathered together information on all of the e-Cohesion systems identified through the various data collection methods. This information is also summarised in the 27 country fiches and the fiche on Interreg. The results of the mapping also fed into the answers to the evaluation questions.

**Figure 1. Overall logic of the mapping of e-Cohesion systems**




*Source: prepared by the evaluation team.*

As already briefly discussed, desk research was one of the data collection methods used to gather information about all of the e-Cohesion systems identified. The mapping based on desk research can be divided into two main stages (see Table 2 below). The **first data collection stage** was to identify e-Cohesion systems in all of the EU27 and for all Interreg programmes. The **second stage** was to collect specific information about the e-Cohesion systems identified during the first step, in line with the mapping framework. It should be noted that in the majority of cases these two stages occurred in parallel.

**Table 2. Key stages in the desk research-based mapping**

| Stage | Sources |
|---|---|
| Stage 1: Identification of e-Cohesion systems | Previous studies and various documents:<br>▪ websites of e-Cohesion systems;<br>▪ websites of authorities;<br>▪ user manuals and presentations for users;<br>▪ various guidelines and documents available online;<br>▪ IT system descriptions;<br>▪ national evaluations and studies;<br><br>Web search based on pre-defined, relevant keywords<br><br>Analysis of the documents available on SFC2014 |
| Stage 2: Researching specific e-Cohesion systems identified | |

*Source: prepared by the evaluation team.*

Once the desk research-based mapping has been completed via the web search and review of various documents available on SFC, as well as various other documents identified by the Contractor or provided by the Commission and others, the evaluation team maintained

continuous contact with the relevant authorities responsible for managing e-Cohesion systems, with the aiming of validating the information collected. This communication with the authorities also continued after the additional information collected through the surveys had been integrated.

### 1.2.2. Survey programme

A large survey programme was implemented to capture users' satisfaction with the key processes and functionalities of e-Cohesion systems, as well as additional factual information about the features of such systems.

The surveys targeted two main respondent groups: **programme authorities** – managing authorities (MAs), intermediate bodies (IBs), certifying authorities (CAs) and audit authorities (AAs)) – who participated in interventions financed by the European Regional Development Fund (ERDF) and Cohesion Fund (CF) during the programming period 2014-2020, and all **beneficiaries** who benefitted from such interventions. We focused solely on the EU Member States (already excluding the UK) and their systems for the electronic exchange of information. The survey only covered the national/regional Operational Programmes (OPs) and Interreg programmes primarily financed from ERDF and Cohesion Fund – 302 programmes in total.

The two surveys aimed both to collect **factual** information on the state of play of e-Cohesion systems in the EU Member States (i.e. what functionalities exist, what systems are in use, etc.), as well as to uncover **evaluative** judgements of the systems from the perspectives of users (i.e. what strengths and weaknesses a system has, the usefulness and user-friendliness of the overall system and its functionalities, etc.). Surveys **were available in all EU official languages** except for Irish. Table 3 below summarises the key steps taken to gather this information.

**Table 3. Key steps in the implementation of the survey programme**

| Pre-fielding | Fielding | Post-fielding |
|---|---|---|
| 1. Defining the respondent target group: ERDF and CF authorities and beneficiaries from EU Member States that benefitted from the support during the 2014-2020 period.<br><br>2. Designing of the survey questionnaire.<br><br>3. Piloting and re-calibration of the survey based on discussions with the Commission, technical tests, expert reviews, and cognitive interviews with authorities and beneficiaries. | 1. Programming the survey into the EU Survey tool.<br><br>2. Disseminating: to the authorities contacted directly (almost 3,000 contact persons), using contact details from the SFC2014. Recruitment of beneficiary respondents was carried out by contacting and asking MAs to disseminate an open link to the survey to beneficiaries of their programmes.<br><br>3. Monitoring: to increase the response rate, reminders were sent; some beneficiaries were targeted directly; direct calls and/or group emails were placed/sent to MAs. | 1. Cleaning and validating of the data.<br><br>2. Analysing and reporting of the data – detailed analysis presented in the Task 4 Report.<br><br>3. An online webinar was organised to present the results of the surveys to the authorities. |

Key information about the surveys is provided in **Table 4** below, including the final number of responses included in the analysis after cleaning.

**Table 4. Key information about the surveys**

| Respondent group | Launch | Closed | Responses included in the analysis (after cleaning) |
|---|---|---|---|
| Authorities | 21 July 2021 | 08 October 2021 | 455 |
| Beneficiaries | 21 July 2021 | 13 October 2021 | 6,248 |

*Source: prepared by the evaluation team.*

### 1.2.3. Webinar to present the survey results

The webinar was organised as part of Task 4, which focused on the implementation of a large-scale survey programme of the authorities and beneficiaries involved in the ERDF and Cohesion Fund during the 2014-2020 programming period.

The key **purpose of this webinar** was to present the results of the survey and to gather additional feedback from the participants on a few selected themes to complement the findings of the surveys. Thus, during the webinar, the evaluation team collected reactions and thoughts on the survey results and obtained additional input on the key selected themes that would later be fed into the final evaluation reports.

The target group for the webinar was MAs and other authorities representing the Member States (IBs, CAs, AAs). The webinar took place online on 23 November 2021 via the Zoom platform. Key technical information about the webinar is provided in **Table 5** below.

**Table 5. Key information about the webinar**

| | |
|---|---|
| Time: | 23 November 2021, 13:30 – 16:15 CET |
| Duration: | 3 hours |
| Target group: | Managing authorities, intermediate bodies, audit authorities, certifying authorities |
| Technical means: | Online via Zoom<br>The tool Mentimeter was used for the interactive part of the webinar |
| Format: | Presentation by the contractor; interactive engagement of attendees by asking them to vote on questions, fill in open-ended answers, with the possibility to unmute and make comments. |

*Source: prepared by the evaluation team.*

The **webinar attracted 113 participants** (out of whom 18 represented the evaluation team (8) and the Commission (10)), with all countries except Lithuania and Cyprus being represented. The additional information and opinions gathered during this webinar were presented in the dedicated webinar report. This information is also used in the present report to complement the findings of the surveys and the desk research.

### 1.2.4. Pilot and in-depth case studies

In total, six case studies were prepared (see Table 6). The aims of these was to enhance practical knowledge as regards the implementation of an advanced e-Cohesion system, in terms of identifying the main features and functionalities; understanding the challenges and lessons learned in the process of developing, introducing and maintaining an e-Cohesion system; understanding how the processes included in e-Cohesion systems lead to simplification; and discussing good practices, so that they can inspire other Member States.

We first piloted studies of two e-Cohesion systems identified as good practices. These two systems were proposed and discussed by the Commission. The second phase, in which additional case studies were prepared, took place once the surveys were closed, so that the survey results could inform the selection and preparation of these additional case studies. In total, six case studies were prepared during the pilot or main phases of the analysis.

**Table 6. e-Cohesion systems analysed in the case studies**

| Case study | e-Cohesion system analysed | Country |
|---|---|---|
| 1 | MIS | Greece |
| 2 | e-Toetus | Estonia |
| 3 | eMS | Interreg |
| 4 | Balcão2020 | Portugal |
| 5 | SFINGE2020 | Italy |
| 6 | SL2014 | Poland |

The in-depth analysis of the selected e-Cohesion systems built on the information gathered during the initial desk research-based mapping and further in-depth **desk research** of additional data sources we had acquired from relevant national authorities or from the EC. The results of the survey were also used to inform the preparation of the case studies, in particular to reflect the perspectives of beneficiaries with regard to the e-Cohesion systems selected. However, the key information source was the large-scale interview programme, which is summarised in Table 7 below. Some of the interviews involved several participants at once. In total, **84 persons representing different perspectives** were interviewed while preparing the case studies.

**Table 7. Interview programme to inform the case studies**

| Perspective represented | Target group | Purpose/key themes | No. of persons interviewed |
|---|---|---|---|
| Policy perspective | Representatives of authorities who have helped to design the system, own it, and are responsible for its overall coordination. | ▪ Legal and policy background surrounding the e-Cohesion system;<br>▪ Overview of the design and deployment process (staff and financial resources, project management);<br>▪ Plans regarding the development of the system;<br>▪ Key challenges in implementing and coordinating such a data exchange system; what works and what does not; needs that still remain unmet. | 13 |
| Technical perspective | Representatives of authorities and/or private contractors who have helped to set up the system, maintain the IT infrastructure, provide IT support and are responsible for its operation and changes at a technical level. | ▪ To discuss various functionalities of the e-Cohesion system and its sophistication;<br>▪ Completion and validation of the desk research-based mapping;<br>▪ Software development (analysis, design, implementation, testing, documentation), deployment, hosting, technical and business support (e.g. help desk), adaptation, extension, re-engineering, change management);<br>▪ Future plans regarding the development of the system;<br>▪ Key challenges from a technical point of view. | 10 |
| User perspective | Beneficiary organisations that have received support from the ERDF and CF interventions most often | ▪ System usefulness and performance in terms of simplification, reduced administrative burden, efficiency gains, reduced error rates, etc. compared with a paper-based system | 61 |

| Perspective represented | Target group | Purpose/key themes | No. of persons interviewed |
|---|---|---|---|
| | used the system in question for the electronic exchange of data. These represent various types of projects. | ▪ Key strengths of the system, i.e. features and functionalities that bring the highest benefits to their users, depending on their role;<br>▪ Identification of needs that are not being met;<br>▪ Any suggestions for the improvements needed. | |
| | Institutional users with different roles in ERDF and CF management: MAs, IBs, CAs, AAs | | |

The final step in the case study programme was a **cross-case studies analysis**, which compared the key findings across all six case studies and drew conclusions and lessons learned from this in-depth analysis.

### 1.2.5. Synthesis and reporting

All the information collected that has been described in the previous sub-sections was synthesised to answer the **evaluation questions, draw conclusions on the key remaining challenges and provide potential solutions** on how these challenges can be addressed. The outcomes of this synthesis are provided in this Final Report.

In addition, another key output that relies on the synthesis of the information gathered is the country fiches. The Final Report is accompanied by **27 country fiches for the Member States and one for Interreg programmes**, concluding the information about e-Cohesion at country and Interreg level. Table 8 below provides a summary of how the various data sources were triangulated.

**Table 8. Key data sources and their synthesis**

| Data source | How it has been used and synthesised |
|---|---|
| Desk research | Desk research is one of the key sources that informed the mapping of e-Cohesion systems and their functionalities. It also informed the preparation of the case studies. Desk research was synthesised with survey results and further validated through communication with the authorities. |
| Surveys | Surveys were one of the key sources used to answer the evaluation questions. These were synthesised with desk research-based mapping. Surveys also informed the preparation of the case studies and country fiches. |
| Interviews | Together with the desk research, interviews were used to inform the case studies. |
| Case studies | In-depth case studies were mostly used to provide specific examples about various aspects explored under the evaluation criteria. The case studies also informed the preparation of some of the country fiches. |
| Webinar | The results of the webinar are used to further complement the findings informed by the surveys and desk research. |
| Communication with authorities | Communication with the authorities helped to further fill in gaps in the information collected via the desk research and surveys, to the extent possible. |

## 1.3. Challenges and limitations of the data and results

This evaluation was the first attempt on such a scale to provide an overview of e-Cohesion at EU level. It should be recognised that some previous, very useful research exists on the

subject[24], but this provides only scattered and much more general data on e-Cohesion; it also needed to be updated. Thus, the evaluation team had limited data on which to build. This was one of the key challenges for the evaluation team.

Another related challenge is the specificity of the subject (electronic data exchange systems). Thus, when collecting primary data via e-mail exchanges with the authorities or through the surveys, we observed a high level of decentralisation of such information, with knowledge largely being spread out among various persons working at the responsible authorities. We also observed that such information is not well documented, and that the documents are not easy to obtain.

Our primary source of information was mainly colleagues working at the MAs and IBs. However, getting in contact with the relevant people was also no easy task, due to the difficulty of identifying the contact details of persons within authorities who were familiar with the policy and technical sides of e-Cohesion. We relied on SFC contact lists and also tried to identify the relevant persons ourselves. Also, in countries with a high degree of decentralisation, the is a lack of a central overview of e-Cohesion and thus each system needs to be explored through the various MAs and IBs.

In addition, the evaluation team faced a number of challenges in implementing the large-scale survey programme. Due to the importance of this method, certain aspects required special attention. These are presented below:

- The survey was experimental in the sense that it was the first time that ERDF and CF beneficiaries had been targeted on such a scale. The survey aimed to cover all ERDF (including Interreg) and CF programmes, and targeted authorities and beneficiaries from all EU Member States. In relation to this attempt to target beneficiaries for the first time at scale, the survey has some limitations in terms of how far conclusions may be drawn, and to what extent certain conclusions are substantiated by the evidence. In addition, the subject of the survey – electronic data exchange systems (e-Cohesion systems) – is not a straightforward one. Based on the share of 'Do not know / cannot answer' answers, the survey results indicate that respondents found some of the survey questions difficult to answer.
- The underlying challenge was reaching beneficiaries. No consolidated data exists on the number of beneficiaries who have implemented ERDF and CF projects/interventions[25]; thus, the total population who could have been targeted is unknown. Moreover, the European Commission has no access to the contact details of beneficiaries. Bearing in mind these key challenges regarding the lack of beneficiary-level information and the data from which representative samples could be drawn, the survey was, from the very beginning, not intended to be representative. Instead, it aimed to cover as much of the relevant population of users as possible.
- To reach the beneficiaries, the evaluation team relied on the help of managing authorities, who were asked to disseminate the survey to their beneficiaries. This approach resulted in the evaluation team not having any opportunity to impact the scope of beneficiaries targeted, except for constant communication and reminders to the MAs asking them to disseminate the surveys to their beneficiaries. The evaluation team does not have any information on how many, or what kind of beneficiaries (i.e. private, public) the MAs targeted.
- This approach of targeting beneficiaries through the MAs and leaving the MAs with all control over this process, resulted in a very uneven distribution of responses

[24] For example, Research for the Regi Committee – e-Cohesion, METIS, 2016; Background study for the Preparation of the Implementation Structure for the 2021+ Period, Ernst & Young for the Czech Ministry of Regional Development, 2019.

[25] Such an exercise was recently finalised as part of another project commissioned by the European Commission, 'Study on the monitoring data on ERDF and Cohesion Fund operations, and on the monitoring systems operated in the 2014-2020 period'.

being collected. For some countries, we received hundreds of responses; for others – only a few. For example, 40% of beneficiary respondents represent Italy and Poland. Some types of authorities or beneficiaries are likely to be overrepresented in the survey. Consequently, this imposes some limitations on the interpretation of data.

In conclusion, the surveys were intended and constructed as a data collection/mapping exercise to be used in synthesis with other sources. Given the lack of any previous data on e-Cohesion systems, this survey was a scoping exercise that sheds new light on what the key trends are in relation to e-Cohesion systems. However, it cannot present an exhaustive and complete picture at the level of each Member State, or each OP/Interreg programme. The surveys do not aim for representativeness or the ability to draw conclusions at system or country level, due to the scope and variety of users of these systems. The surveys do, however, provide valuable insights into overall trends – and most importantly, into the trends regarding satisfaction with e-Cohesion systems.

# 2. e-Cohesion – discussing the concept and intervention logic

## 2.1. Concept of e-Cohesion

At the outset of this report, we wish to discuss what an e-Cohesion system is. What is the purpose of an e-Cohesion system? What are its properties? Who are its users, and what distinguishes an e-Cohesion system from other IT systems that support programme implementation? We will begin by looking at this last aspect.

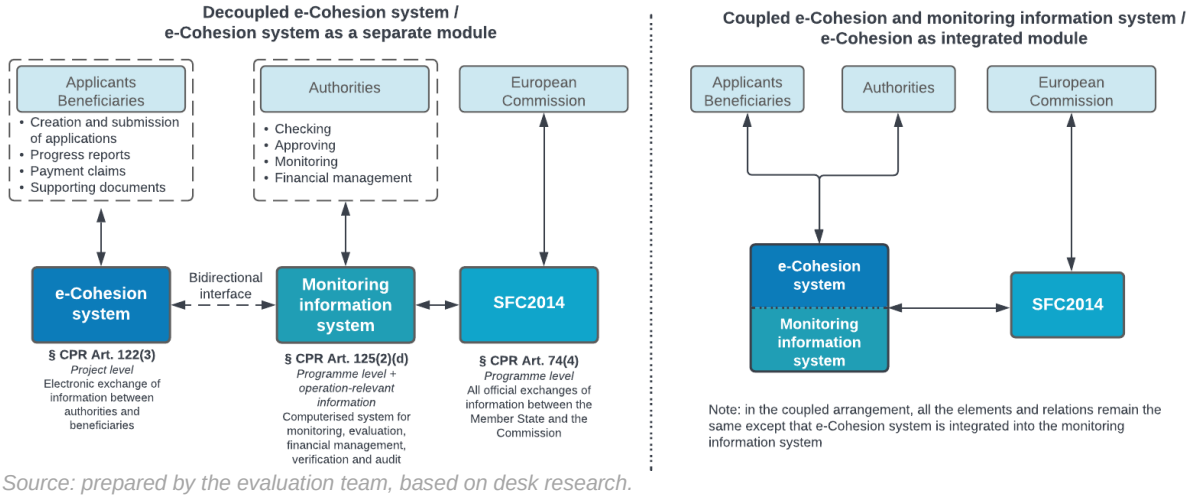
Before 2014, systems that supported programme implementation mainly focused on monitoring and accounting – the internal, mainly transactional processes related to project administration, checking and approval. Such transactional monitoring and accounting systems support the implementation of programmes by managing project-related information on physical and financial progress. Transactional monitoring systems thus focus on the daily operational processes executed by the staff members of authorities during programme implementation, such as financial management and verification.

Beyond the transactional activities involved in handling applications, payment claims, progress reports, change requests, withdrawals, recoveries, etc., the need arose for better support for analytical activities and decision making. This is the domain of business intelligence: the concepts and technologies supporting analytical requirements and decision making, necessary for programme monitoring, evaluation and audits. Transactional monitoring and accounting systems and analytical business intelligence systems both support internal processes that are realised by the staff members of authorities. As such, they are part of the **back-office** IT infrastructure of programme implementation.

In contrast to these back-office systems, **e-Cohesion systems provide front-office functionality** that supports interactions with beneficiaries and applicants, who represent the ‘client side’ in the context of programme implementation. On the IT level, the concept of e-Cohesion describes a bundle of functionalities that support the collection of information about project properties, as well as financial and physical targets and their realisation.

e-Cohesion still represents a distinctive bundle of functionalities even though it is often implemented as an integrated part of a larger system that supports transactional monitoring (financial management, verification) and accounting and analytical processes (e.g. evaluation) (see Figure 2 below). The terms ‘monitoring system’ and ‘e-Cohesion system’ are often used synonymously. In many cases, the functionality relating to e-Cohesion forms an integrated part of the transactional monitoring system. In these cases, e-Cohesion and transactional monitoring (activities relating to the checking and approving of applications, progress reports and payment claims) are supported by a unified system that uses the same user interface, the same database and the same role-based access control model. There are also constellations in which the e-Cohesion system is a decoupled entity. In such cases, the front-office functionality exists more independently from the back-office functionality. Such independence means that if one system is out of order, the other one can still work. Also, one system can be developed and replaced separately if technical progress or additional requirements make this desirable. Both systems have their own database, which are connected by bi-directional interfaces.

**Figure 2. Relationship between e-Cohesion and information monitoring systems**




*Source: prepared by the evaluation team, based on desk research.*

Nevertheless, e-Cohesion-related requirements, discussed in the section below, are distinguishable from monitoring, focusing the 'client side' and supporting interactions with beneficiaries. Box 1 below briefly outlines the differing legal provisions governing e-Cohesion systems and systems for monitoring and information.

**Box 1. e-Cohesion systems and monitoring and information systems, as defined by the CPR 2014-2020**

The legal framework makes a distinction between e-Cohesion systems and monitoring and information systems, dedicating different legal provisions and prescribing responsibilities for their enforcement at different levels:

- The overall requirement for **e-Cohesion** is outlined in article 122(3) of the CPR 2014-2020: "Member States shall ensure that no later than 31 December 2015, all exchanges of information between beneficiaries and a managing authority, a certifying authority, an audit authority and intermediate bodies can be carried out by means of electronic data exchange systems". Implementation of this article falls under the responsibility of the Member State.
- The overall provision aimed at the establishment of **monitoring information systems** is outlined in the article 125(d): "Establish a system to record and store in computerised form data on each operation necessary for monitoring, evaluation, financial management, verification and audit, including data on individual participants in operations, where applicable". Implementation of this article falls under the responsibility of the managing authority.

Distinction between e-Cohesion systems and monitoring and information systems is maintained in the legal framework for 2021-2027 programming period.

## 2.2. Intervention logic

This section continues the discussion on the concept of e-Cohesion, but from the angle of the legal provisions, as outlined by the relevant legislation. The intervention logic describes the expected logic of the intervention or chain of events that should lead to the intended change.[26] The intervention logic for e-Cohesion described in the following chapters and visualised in Figure 3 presents our understanding of e-Cohesion, its key elements and interactions. Thus, this intervention logic has guided this evaluation, including our methodological approach and the specific methodological tools developed (e.g. the mapping framework, interview and survey questionnaires).

### *Defining the scope of e-Cohesion and its key requirements*

The concept of e-Cohesion, as outlined in Article 122(3) of the Common Provision Regulation (CPR), concerns the electronic exchange of information **between beneficiaries of Cohesion policy programmes and programme authorities** during the 2014-2020

[26] European Commission, Better Regulation Guidelines, Tool 46. Designing the evaluation.

programming period. An electronic data exchange system means mechanisms and instruments that allow the electronic exchange of documents and data, including audiovisual media support, scanned documents and electronic files.[27] In practice, an e-Cohesion system is part of a broader management information system required by the CPR for the management of an OP. The e-Cohesion system (Art. 122(3)) serves as the 'front office', while the system for recording and storing, in computerised form, data on each operation necessary for monitoring, evaluation, financial management (Art. 125(2)(d)), plays the role of 'back office' (see also the brief discussion on these two concepts in Section 2.1 above).

These legal provisions, coupled with the Tender Specifications, thus allowed us to define the clear **scope of this evaluation**:

- EU27;
- 2014-2020 programming period;
- ERDF and CF, including Interreg;
- electronic exchange of information between beneficiaries of Cohesion policy programmes and programme authorities (front-office).

The rules in the legislative package 2014-2020 linked to the e-Cohesion initiative were formulated in such a way as to enable the Member States and regions to find their own solutions according to their organisational and institutional structure and particular needs. That is, they define **uniform minimum requirements**, which are then further elaborated in various guidance documents[28]. These encourage Member States, regions and the authorities in charge of OPs to exploit the full potential of the simplification measures proposed in the e-Cohesion regulatory framework. These key requirements are defined in the Common Provisions Regulation[29] and the Implementing Regulation[30], and are summarised in **Table 9** below, grouped under **principles, key processes, functionalities and data security requirements**.

**Table 9. Key requirements for e-Cohesion systems**

| Category | Dimension | Source |
|---|---|---|
| Principles | **Interoperability**. The systems referred to in the first subparagraph shall facilitate interoperability with national and Union frameworks <…> | CPR Article 122 (3) |
| | **Once-only encoding**. The systems referred to in the first subparagraph shall <…> allow for the beneficiaries to submit all information referred to in the first subparagraph only once. Submission of documents and data through the electronic data exchange systems shall be made only once as regards the same operation for all authorities implementing the same programme. | CPR Article 122 (3) Implementing Regulation Article 10 (4) |
| Key processes | Reporting on progress | Implementing Regulation Article 8 (1) |
| | Payment claims | |
| | Exchange of information related to management verifications and audits | |
| Functionalities | **Interactive forms** and/or forms prefilled by the system on the basis of data that are stored at consecutive steps in the procedures | Implementing Regulation Article 9 (3-a) |

[27] European Commission, Questions and Answers on e-Cohesion, Programming period 2014-2020 (ERDF, Cohesion Fund and ESF, 2017.

[28] Such as Questions & Answers on e-Cohesion Programming period 2014-2020 (ERDF, Cohesion Fund and ESF), EGESIF_17-0006-00, 06/04/2017; and Building Blocks for e-cohesion: good practices from Member States, regions and programmes, Version 2, December 2013.

[29] Regulation (EU) No 1303/2013 Of the European Parliament and of the Council of 17 December 2013.

[30] Commission Implementing Regulation (EU) No 1011/2014 pf 22 September 2014.

| Category | Dimension | Source |
|---|---|---|
| | **Automatic calculations** where applicable | Implementing Regulation Article 9 (3-b) |
| | **Automatic embedded controls** which reduce repeated exchanges of documents or information as far as possible | Implementing Regulation Article 9 (3-c) |
| | **System-generated alerts** to inform the beneficiary that certain actions can be performed | Implementing Regulation Article 9 (3-d) |
| | **Online status tracking,** allowing the beneficiary to monitor the current status of the project | Implementing Regulation Article 9 (3-e) |
| | **Availability of all previous data** and documents processed by the electronic data exchange system. | Implementing Regulation Article 9 (3-f) |
| | Exchanges of data and transactions shall bear an **electronic signature** compatible with one of the three types of electronic signature defined by Directive 1999/93/EC of the European Parliament and of the Council | Implementing Regulation Article 10 (2) |
| | The electronic data exchange systems shall be **accessible either directly through an interactive user interface** (a web application) **or via a technical interface** that allows for automatic synchronisation and transmission of data between beneficiaries' and Member States' systems | Implementing Regulation Article 10 (5) |
| Data security requirements | Data security | Implementing Regulation Article 9 (1) |
| | Data integrity | |
| | Data confidentiality. When processing information, the electronic data exchange systems shall guarantee the protection of privacy of personal data for individuals and commercial confidentiality for legal entities. | |
| | Authentication of the sender | |
| | The electronic data exchange systems shall be available and operational during and outside standard office hours, except for technical maintenance activities. | |

*Source: prepared by the evaluation team.*

The **key principles, processes, functionalities and data security requirements** identified above form the basis for our mapping framework for this assignment. It is important to note that the dimension of the key functionalities required for e-Cohesion systems (e.g. system-generated alerts, availability of previous data, etc.) largely determines the user-friendliness of e-Cohesion systems.

### *The logic behind e-Cohesion*

The need for an initiative such as e-Cohesion was underpinned by a wide variety of **problems and needs**. In general, academic research identifies three key categories of problems and needs that drive the implementation of e-government initiatives: political and social factors (the degree to which the decisions to introduce technologies to digitalise public services or transform the policymaking process are influenced by the political environment and by citizens' demands); economic factors (the economic objectives of internal efficiency, effectiveness, rationalisation as simplification); and technological factors (newly available technologies, as well as technological cultures and practices, greatly influence expectations and drive new e-government services, as well as new policymaking

processes).[31] In the context of the evaluation of e-Cohesion, we see economic and technological factors as being the most relevant.

To address these economic and technological needs, the **key objective** of the e-Cohesion initiative is to support the reduction of administrative burden for beneficiaries and programme authorities as an important part of the ESI Funds' simplification efforts, and to save time and reduce the costs associated with ERDF and CF implementation. Several **specific objectives** can be then deduced from the Implementing Regulation 1011/2014:

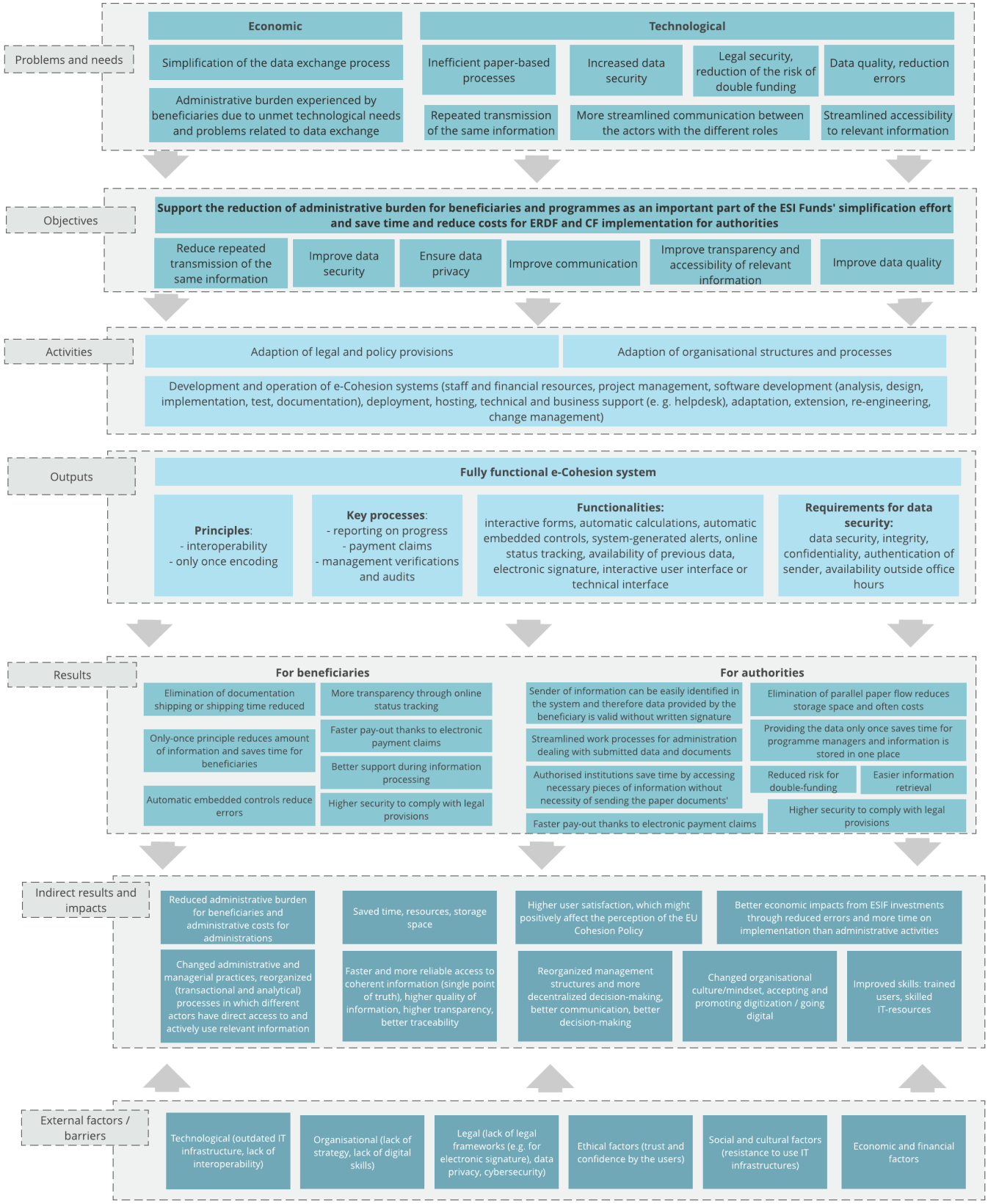
- reduce repeated transmission of the same information;
- improve data security (confidentiality, integrity, availability, non-repudiation);
- ensure data privacy;
- improve communication;
- improve transparency and accessibility of relevant information;
- improve data quality (fewer calculation errors, fewer missing values, correct format, fewer other inconsistencies, high up-to-datedness).

In the process of developing and maintaining the system, number of **activities** are implemented to adapt legal and policy provisions, adapt organisational structures and processes, and develop and operate e-Cohesion systems (such activities and resources deployed may include staff and financial resources, project management, software development (analysis, design, implementation, testing, documentation), deployment, hosting, technical and business support (e.g. help desk), adaptation, extension, reengineering, change management). It is expected that implementation of these activities would lead to the **key output**: a fully functional e-Cohesion system that meets or exceeds all minimum e-Cohesion requirements (as summarised in Table 9 above). Meeting each of the requirements above is expected to contribute to specific **results** for authorities and beneficiaries, including some broader **indirect results and impacts**, which originate due to the intervention of e-Cohesion.

All of these aspects of the intervention logic are encoded into the evaluation questions and judgement criteria, the answers to which are provided in Section 4. The intervention logic itself is visualised in Figure 3 below.

[31] JRC, Exploring Digital Government transformation in the EU. Analysis of the state of the art and review of literature. 2019.

**Figure 3. Intervention logic of e-Cohesion**




*Source: prepared by the evaluation team.*

## 2.3. Analysis of changes with regard to e-Cohesion: comparison of 2014-2020 and 2021-2027 provisions

During the course of our evaluation, in June 2021, the new CPR 2021-2027[32] was adopted. Among other things, the new CPR updated the provisions relating to electronic data exchange systems[33]. The intervention logic presented in previous chapters follows and builds upon the provisions that were applicable during the 2014-2020 programming period. These provisions relating to e-Cohesion requirements were outlined in the CPR 2014-2020[34] and the Implementing Regulation[35]. Moreover, guidance documents, such as a Q&A on e-Cohesion[36], were also prepared to further explain the requirements.

Although our evaluation analyses the 2014-2020 period, it is important to look at the newly introduced requirements and changes, due to the fact that the changes could be relevant when formulating the potential solutions, presented in Section 5.

The CPR 2021-2027, and more specifically, Annex XIV, is the only legal document outlining the new requirements for e-Cohesion systems. **In contrast to the CPR 2014-2020, the CPR 2021-2027 does not require the Commission to adopt further implementing acts laying down detailed rules concerning e-Cohesion systems.** This is probably due to Member States and managing authorities already being much more familiar with the concept now than they were back in 2014.

Analysis and comparison of the provisions of the CPR 2014-2020 and the CPR 2021-2027 shows that **continuity in the e-Cohesion requirements, and no major changes have been introduced**. The formal requirements for e-Cohesion systems remain largely similar (see Annex 3 for a detailed comparison). The key similarities and differences are discussed in paragraphs below.

The CPR 2021-2027 **makes the electronic exchange of information mandatory**, with the sole derogation for cases in which a managing authority receives an explicit request from a beneficiary to accept documents in paper format. It also provides deferrals to a few funding programmes – namely, the EMFAF, AMIF, ISF, and BMVI, until 1 January 2023. Moreover, it excludes from its mandatory requirements programmes or priorities that address material deprivation through food and/or basic material assistance to the most deprived persons, including children, and providing accompanying measures to support their social inclusion. By contrast, the CPR 2014-2020 provided that e-Cohesion systems should be in place and that data exchanges "can be carried out". This implied that beneficiaries should have the opportunity to exchange documents electronically, but that it was not mandatory.

[32] Regulation (EU) 2021/1060 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy.

[33] Since the changes in the new CPR are limited, the comparative analysis is integrated into the final report (as opposed to a separate deliverable as initially specified in the Tender Specifications).

[34] Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

[35] Commission Implementing Regulation (EU) No 1011/2014 of 22 September 2014 laying down detailed rules for implementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council as regards the models for submission of certain information to the Commission and the detailed rules concerning the exchanges of information between beneficiaries and managing authorities, certifying authorities, audit authorities and intermediate bodies.

[36] European Commission, Questions and Answers on e-Cohesion, Programming period 2014-2020 (ERDF, Cohesion Fund and ESF, 2017.

When it comes to the **key principles** of interoperability and once-only encoding, these are not directly mentioned in CPR 2021-2027. Nevertheless, the functionality of having interactive forms and/or forms that are prefilled by the system technically enables once-only encoding to some extent. Requirement of having interactive forms and/or forms that are prefilled by the system also requires the minimum level of interoperability, at least the internal one.

The CPR 2021-2027 requirements for e-Cohesion refers to the **key processes** of payment claims and the exchange of information relating to management verifications and audits. However, reporting on progress is not specified in the document, which had been the case in the Implementing Regulation for the 2014-2020 programming period.

The new CPR similarly requires the introduction and maintenance of the same **key functionalities**. The systems must provide/ensure:

a) interactive forms and/or forms prefilled by the system on the basis of data that are stored at consecutive steps in the procedures;
b) automatic calculations, where applicable;
c) automatic embedded controls that reduce repeated exchanges of documents or information;
d) system-generated alerts to inform the beneficiary that certain actions can be performed;
e) online status tracking, allowing the beneficiary to monitor the current status of the project;
f) all previously available data and documents processed by the electronic data exchange system.

In terms of **data security requirements**, both CPRs require systems to ensure the use of an electronic signature; the data security, integrity, confidentiality, and authentication of the sender; as well as the protection of privacy and personal data for individuals, and commercial confidentiality for legal entities. The systems must also work during and outside standard office hours. It should be noted that eIDAS Regulation, which defines the requirements for e-signatures, were updated and now the CPR 2021-2027 and its Annex XIV refers to the updated one.[37] Concerning the provisions for ensuring the protection of privacy and personal data for individuals, the legal frameworks were also updated.[38]

The new CPR emphasises the user-friendliness of the system, especially its logical and intuitive interface, which was not discussed in the previous regulation. The key changes are compared in Table 10 below, while a detailed comparison is provided in Annex 3.

[37] 2021-2027 requirements for e-signatures refer to Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC. Whereas the requirements for 2014-2020 referred to Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures

[38] 2021-2027 requirements refer to Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) and Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). Whereas the requirements for 2014-2020 referred to Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector; Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws; Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data

**Table 10. Comparison of some key changes between CPR 2014-2020 and CPR 2021-2027**

| 2014-2020 | 2021-2027 |
|---|---|
| **General provision** | |
| CPR Art. 122(3): Member States shall ensure that no later than 31 December 2015, all exchanges of information between beneficiaries and a managing authority, a certifying authority, an audit authority and intermediate bodies can be carried out by means of electronic data exchange systems. | CPR Art. 69(8): Member States shall ensure that all exchanges of information between beneficiaries and the programme authorities are carried out by means of electronic data exchange systems in accordance with Annex XIV. |
| **Implementation principle** | |
| Not addressed. | CPR Art. 69(8): Member States shall promote the benefits of electronic data exchange and provide all necessary support to beneficiaries in this respect. |
| **Definition** | |
| CIR Art. 8(1): "Electronic data exchange systems", as referred to in the first subparagraph of Article 122(3) of Regulation (EU) No 1303/2013 shall mean mechanisms and instruments allowing the electronic exchange of documents and data, including audiovisual media supports, scanned documents and electronic files. | Not addressed. |
| **Implementation scope of application** | |
| CPR Art. 122(4): Paragraph 3 shall not apply to the EMFF. | CPR Art. 69(8): For programmes supported by the EMFAF, the AMIF, the ISF and the BMVI, the first subparagraph shall apply as from 1 January 2023. The first subparagraph shall not apply to programmes or priorities under point (m) of Article 4(1) of the ESF+ Regulation. |
| **Key principles: interoperability and once-only encoding** | |
| CPR Art. 122(3): The systems referred to in the first subparagraph shall facilitate interoperability with national and Union frameworks and allow for the beneficiaries to submit all information referred to in the first subparagraph only once. | Not directly addressed.<br>. |
| CIR Art. 10(4): Submission of documents and data through the electronic data exchange systems shall be made only once as referred to in the second subparagraph of Article 122(3) of Regulation (EU) No 1303/2013 as regards the same operation for all authorities implementing the same programme.<br>CIR Art. 10(4): These authorities shall work together at legal, organisational, semantic and technical levels, ensuring effective communication, as well as the exchange and re-use of information and knowledge.<br>CIR Art. 10(4): This is without prejudice of processes allowing the beneficiary to update erroneous or obsolete data or unreadable documents. | Not directly addressed. |
| **Key processes** | |
| CIR Art. 8(1): The exchange of documents and data shall include reporting on progress, payment claims and exchange of information related to management verifications and audits. | Annex XIV – 1.5: Ensuring record-keeping and data storage in the system enabling both administrative verifications of payment claims submitted by beneficiaries in accordance with Article 74(2) and audits. |
| CIR Art. 8(2): The electronic data exchange systems shall enable administrative verification in respect of each application for reimbursement by beneficiaries under Article 125(5) of Regulation (EU) No 1303/2013 and audits to rely on information and documents available through the electronic data exchange systems, when such information and documents are exchanged in electronic form in compliance with Article 122(3) of that Regulation. Paper documents may only be requested by these responsible authorities in exceptional cases, following a risk analysis, and only if paper documents are the true source of the scanned documents uploaded in the electronic data exchange systems. | CPR Art. 69(8): By way of derogation from the first subparagraph, the managing authority may exceptionally accept, upon the explicit request of a beneficiary, the exchanges of information in paper format, without prejudice to its obligation to record and store data in accordance with point (e) of Article 72(1). |
| **User-friendliness** | |
| Not addressed | Annex IV – 1.3: Ensuring that the system aims to make use of logical, simple and intuitive functions and interface |

*Source: prepared by the evaluation team.*

# 3. The landscape of e-Cohesion systems

**Key messages**

- The mapping identified 108 e-Cohesion systems across the ERDF and CF OPs and Interreg programmes. Of these, 75 systems cover national/regional OPs only; 11 cover national/regional and Interreg programmes; and 22 systems work with Interreg programmes only.
- Most countries use a single e-Cohesion system.
- The majority of systems identified began operating during the 2014-2020 programming period.
- There are only four national/regional and four Interreg programmes without an e-Cohesion system.

## 3.1. General overview

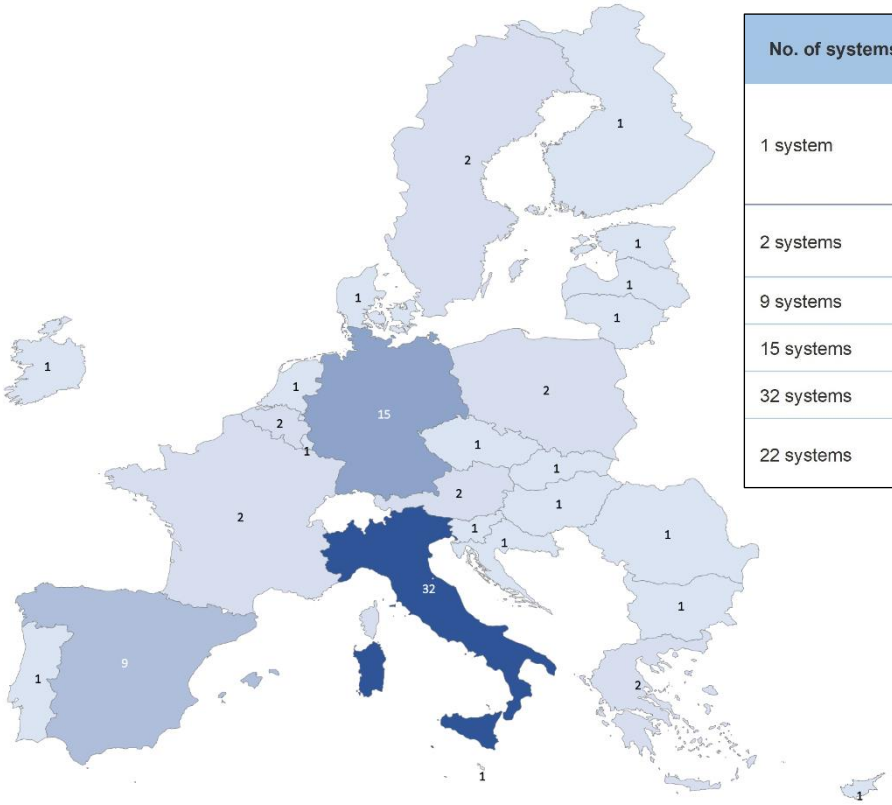
This sub-section provides an overview of the e-Cohesion systems identified, focusing on coverage by Member State. In total, the evaluation mapped 108 e-Cohesion systems, covering all of the EU27, as well the cross-border Interreg. Out of these 108 systems, 75 systems are used only for national/regional OPs, 11 systems are used for national/regional OPs and Interreg programmes, and 22 systems are used only for Interreg.

**Figure 4. Types of e-Cohesion systems identified**

| National/regional systems | National/regional (but also Interreg) | Interreg systems |
|---|---|---|
| **75 systems** | **11 systems** | **22 systems** |
| These systems are used only for national/regional programmes. | These systems are primarily used for national/regional programmes, but also cover some Interreg ones. | These systems are exclusively used for Interreg programmes. |

**We have identified that all Member States have e-Cohesion systems.** A majority of the Member States (18) have one e-Cohesion system to manage both ERDF and CF interventions. In Austria, Belgium, France, Greece, Poland, and Sweden, we identified two e-Cohesion systems per country; in Spain – 9 systems (although Fondos2020 is the key one). The most decentralised countries in terms of the number of e-Cohesion systems are Germany (15 systems) and Italy (32 systems). Here, almost every national/regional OP has a dedicated e-Cohesion system. The following figure depicts the number of e-Cohesion systems identified per country.

**Figure 5. Number of e-Cohesion systems identified per country (excluding Interreg-only systems)**




| No. of systems | Country |
|---|---|
| 1 system | BG HR CY CZ DK EE FI HU IE LV LT LU MT NL PT RO SK SI |
| 2 systems | AT BE FR EL PL SE |
| 9 systems | ES |
| 15 systems | DE |
| 32 systems | IT |
| 22 systems | Interreg-only systems |

*Source: prepared by the evaluation team based on mapping data, using GeoNames geographical database.*

Another angle from which to analyse coverage is to look at it from the perspective of national/regional OPs and Interreg programmes. In total, the evaluation focused on 302 programmes (201 national/regional OPs and 101 Interreg programmes, including the European Neighbourhood Instrument (ENI)). Our mapping shows that all but eight of these programmes have at least one dedicated e-Cohesion system. One Interreg programme (Interreg V-A – United Kingdom-Ireland 2014TC16RFCB048) uses the Welsh e-Cohesion system; however, the UK is out of the scope of this evaluation, and thus this system was excluded from further detailed analysis.

Based on our coverage analysis, we identified four national/regional and four Interreg programmes that either do not use an e-Cohesion system, or we have not identified it, or its use is not relevant (for a brief comment, please see Table 11 below). All Interreg programmes without an e-Cohesion system are under the ENI. It should be noted that during the 2014-2020 programming period, ENI programmes operated under a different legal framework. Thus, these programmes were not obliged to provide their beneficiaries with the possibility to use an electronic data exchange system. However, in the 2021-2027 period, these programmes will have to follow the provisions of the CPR 2021-2027, and thus also the requirements for e-Cohesion systems.

**Table 11. Operational programmes that do not use an e-Cohesion system**

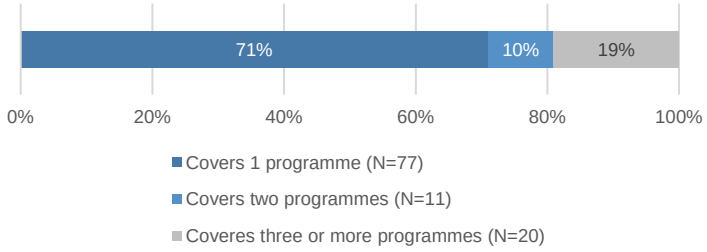
| Country / type | CCI | OP | Comment |
|---|---|---|---|
| Germany | 2014DE16RFOP006 | Hamburg - ERDF | No e-Cohesion system. |
| Germany | 2014DE16RFOP011 | Saarland - ERDF | No e-Cohesion system. |
| Finland | 2016FI16RFSM001 | SME Initiative - FI - ERDF | No e-Cohesion system. |
| France | 2014FR16M2TA001 | Technical Assistance - FR - ERDF/ESF | No e-Cohesion system, as it is not relevant for this type of programme. |

| Country / type | CCI | OP | Comment |
|---|---|---|---|
| Interreg | 2014TC16M5CB013 | Italy – Tunisia ENI CBC | No e-Cohesion system identified. |
| Interreg | 2014TC16M5CB015 | Mediterranean Sea Basin ENI CBC | No e-Cohesion system identified. |
| Interreg | 2014TC16M5CB008 | Latvia – Lithuania – Belarus ENI CBC | No e-Cohesion system. |
| Interreg | 2014TC16M5CB005 | Latvia – Russia ENI CBC | No e-Cohesion system. |

*Source: prepared by the evaluation team, based on mapping analysis.*

Out of 108 e-Cohesion systems identified, around 70% of them cover only one programme, and are thus programme-specific (Figure 6). However, at the other end of the spectrum, we have identified a few e-Cohesion systems that are used to support dozens of programmes, with the result that the five largest e-Cohesion systems cover almost 50% of national/regional and Interreg programmes.

**Figure 6. Number of programmes covered by each e-Cohesion system**




| No. of programmes covered | e-Cohesion system |
|---|---|
| 37 | Synergie (FR) |
| 36 | eMS (Interreg) |
| 25 | SL2014 (PL) |
| 22 | MIS (EL) |
| 21 | Fondos2020 (ES) |

*Source: prepared by the evaluation team, based on mapping analysis.*

Detailed lists of the e-Cohesion systems identified per country and per programme is provided in Annex 1.1. and Annex 1.2.

## 3.2. Coverage of national/regional OPs

In this section, we provide an overview of those systems used for national/regional OPs. The total number of systems analysed in this section is 86. Analysis of the coverage of Interreg programmes is provided separately in the section that follows. The information in this section allows us to generalise as to how the ERDF and CF are managed in terms of the electronic exchange of information.

In the evaluation, we targeted 201 national/regional OPs across the EU27. We have identified e-Cohesion systems for most OPs, except for the four national/regional programmes mentioned above (Table 11). Our mapping of the coverage of the ERDF and CF programmes shows that the majority of national/regional OPs use one system – this is the case for around 80% of all national/regional OPs.

**Table 12. Number of systems used per national/regional OP**

| No. of programmes | No. of systems used per programme | % |
|---|---|---|
| 4 | 0 | 2% |
| 164 | 1 | 82% |

| No. of programmes | No. of systems used per programme | % |
|---|---|---|
| 30 | 2 | 15% |
| 2 | 3 | 1% |
| 1 | 4 | 0% |

*Source: prepared by the evaluation team, based on mapping analysis.*

The majority of Member States have adopted a centralised approach to the implementation of e-Cohesion, using one system to cover the existing national/regional OPs. Only Austria[39], Belgium, Germany, Italy and Spain can be identified as countries that rely on a decentralised approach. In these countries, almost every existing OP has its own dedicated e-Cohesion system (Italy, Germany, Belgium), or a mixed approach is adopted in which there is one key system, but additional systems are also used to cover parts of the OP (Spain).

**Table 13. Number of national/regional OPs and e-Cohesion systems**

| No. of national / regional OPs per country | No. of systems per country | Countries | Category |
|---|---|---|---|
| 1 | 1 | Cyprus, Denmark, Estonia, Finland, Croatia, Lithuania, Luxembourg, Latvia, Slovenia | Centralised approach |
| | 2 | Austria | Decentralised approach |
| 2 | 1 | Ireland, Malta | Centralised approach |
| 3 | 2 | Belgium | Decentralised approach |
| 4 | 1 | Netherlands, Romania, Slovakia | Centralised approach |
| 5 | 1 | Bulgaria, Hungary | Centralised approach |
| 6 | 1 | Czechia | Centralised approach |
| 10 | 1 | Portugal | Centralised approach |
| | 2 | Sweden | Centralised approach |
| 14 | 15 | Germany | Decentralised approach |
| 16 | 2 | Greece | Centralised approach |
| 21 | 9 | Spain | Decentralised approach |

[39] Austria's implementation of e-Cohesion is decentralised – both identified systems cover the country's only national OP "Investments in Growth and Employment Austria 2014-2020". FPAK is only used in the Austrian region City of Vienna; IWBecos was introduced for regions in Austria that do not have their own e-Cohesion system. But the system has not yet been used by any beneficiary.

| No. of national / regional OPs per country | No. of systems per country | Countries | Category |
|---|---|---|---|
| | 2 | Poland | Centralised approach |
| 29 | 32 | Italy | Decentralised approach |
| 31 | 2 | France | Centralised approach |
| **197 OPs** | **86 systems** | **27 countries** | |

*Source: prepared by the evaluation team, based on mapping analysis.*
*Note: OPs without systems are excluded from the analysis.*

There are 33 OPs that use more than one system. The majority of these cover Greece (16), Spain (10) and Italy (5). Austria and Germany each also have an OP that works with two systems. Such an arrangement, in which multiple e-Cohesion systems per programme are used, generally arises because different IBs are involved in the management of the OP, due to the different type and nature of the projects they manage, and each uses a different e-Cohesion system. An overview of some country-specific information is provided in the box below.

**Box 2. Context of countries using a few e-Cohesion systems per OP**

In the case of **Greece**, all OPs use two systems: MIS and PSKE. PSKE (the State Aid Information System) is only used for managing state aid projects – the types of projects spread throughout all Greek OPs.

**Spain** shows more of a mosaic picture, in which OPs use combinations of different systems. MA uses Fondos2020 to exchange information with all IBs and directly with the beneficiaries of some OPs. For the daily management of projects, several IBs use their own systems (e.g. Galatea, FONCYL, SIFEI1420, etc.) to exchange information with beneficiaries, and then share this information with the MA through Fondos2020. Thus, many OPs use Fondos2020, as well as another e-Cohesion system relevant only to the specific IB.

There are two systems in **Austria** used within the same OP: a national one (IWBecos), and a regional one (FPAK). FPAK is only used in the City of Vienna.

*Source: prepared by the evaluation team.*

## 3.3. Coverage of Interreg programmes

This section provides a brief overview of the coverage of Interreg programmes by e-Cohesion systems. Out of the 101 Interreg programmes, one Interreg program[40] is covered by the Welsh e-Cohesion system WEFO online. We did not include this e-Cohesion system and the Interreg programme it covers in the analyses because the UK is outside the scope of the evaluation. Four Interreg programmes do not use an e-Cohesion system[41]. Thus, for the remaining 96 Interreg programmes, we have mapped 33 e-Cohesion systems that are in use.

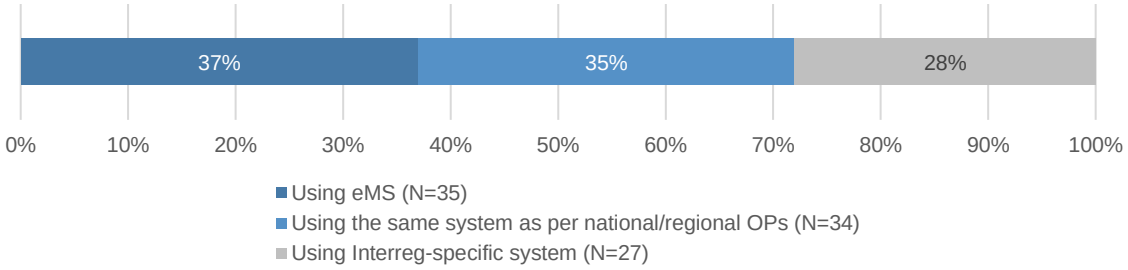
Most of the 96 Interreg programmes in this analysis can be divided into three categories according to the type of e-Cohesion systems used:

[40] Interreg V-A - United Kingdom-Ireland (Ireland-Wales) 2014TC16RFCB048.

[41] 2014TC16M5CB013 Italy – Tunisia ENI CBC; 2014TC16M5CB015 Mediterranean Sea Basin ENI CBC; 2014TC16M5CB008 Latvia – Lithuania – Belarus ENI CBC; 2014TC16M5CB005 Latvia – Russia ENI CBC.

1. Interreg programmes using the electronic Monitoring System (eMS), owned and maintained by Interact[42], a programme funded by the European Commission under the European Territorial Cooperation objective;
2. Interreg programmes using a national/regional e-Cohesion system owned and supported by one of the Member States (concomitantly used for national/regional OPs);
3. Interreg programmes using e-Cohesion systems specifically developed for Interreg programmes.

**Figure 7. Categorisation of Interreg programmes according to the type of e-Cohesion system used**




*Source: prepared by the evaluation team, based on mapping results.*

Over a third of Interreg programmes (35 programmes) **use the eMS**, making this the most common category. The second most common category, with just under a third of Interreg programmes (34), **use one of the involved member states' e-Cohesion system** used for national/regional OPs. In the third category, we find 27 Interreg programmes that **use e-Cohesion systems developed explicitly for Interreg programmes**.

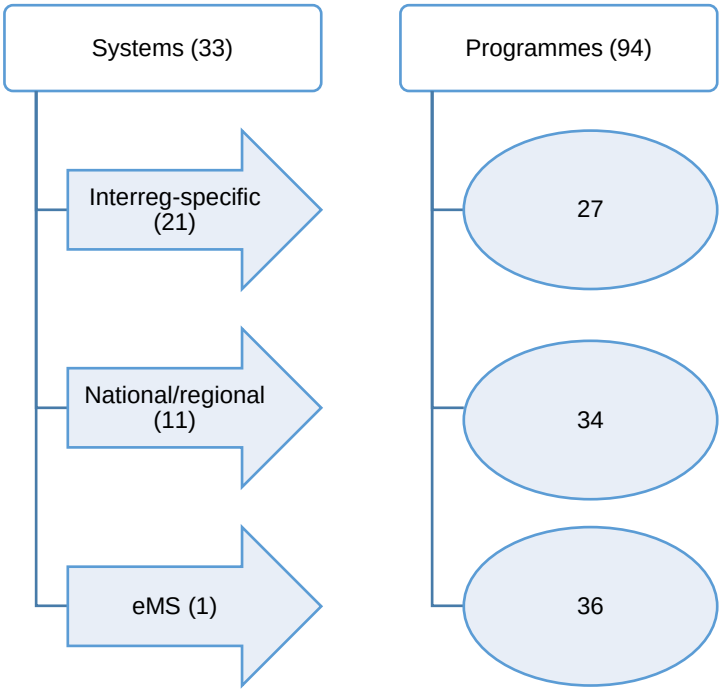
Based on our findings, a total of 33 e-Cohesion systems are used for 96 Interreg programmes. Out of these 33 systems used by Interreg programmes:

- Twenty-two are unique e-Cohesion systems specifically used for Interreg programmes: eMS and 21 others;
- Eleven are national/regional systems used by Interreg.

The types of e-Cohesion systems, and the number of programmes covered by each of them, are summarised in Figure 8 below.

[42] Interact is a programme aimed at reinforcing the effectiveness of Cohesion policy by promoting the exchange of experiences, the transfer of good practices and the dissemination of innovative approaches among the territorial cooperation programmes and partners. eMS is one of Interact's products.

**Figure 8. E-Cohesion systems for Interreg programmes**




*Source: prepared by the evaluation team, based on the mapping.*

# 4. Key findings

The evaluation was carried out in line with the Commission's Better Regulation guidelines, with the analysis being structured in accordance with six evaluation criteria. In addition to the Better Regulation criteria of effectiveness, efficiency, relevance, coherence and EU added value, the evaluation also analysed the user-friendliness of e-Cohesion systems. Each of the sections that follow corresponds to one of these six evaluation criteria and contains answers to the evaluation questions, based on the judgment criteria that were outlined at the outset of the evaluation study. The development of the evaluation framework was predominantly based on Implementing Regulation 1011/2014,[43] Article 122(3) of the 2014-2020 Common Provisions Regulation,[44] and various guidance documents.[45] The discussion of the evaluation criteria is ordered thematically to provide a coherent understanding of the state of play of e-Cohesion in the EU27.

The analysis is based on the findings obtained from the mapping of e-Cohesion systems, the surveys of beneficiaries and authorities, the webinar held in November 2021 with almost 100 authority representatives from the EU27 Member States to discuss and complement the results of the surveys, as well as the in-depth case studies on selected systems. This wide array of qualitative and quantitative data was triangulated to provide the answers to the evaluation questions presented in the sections below.

## 4.1. Relevance

**Relevance, in the context of e-Cohesion, is defined as the extent to which the objectives of the e-Cohesion initiative are pertinent to the policy priorities and needs faced by the target groups of the intervention.** This evaluation criterion is further operationalised into three evaluation questions. Each evaluation question is accompanied by several judgement criteria, which outline how the question is assessed. The evaluation questions are provided below, each of them preceding the relevant section that provides an assessment of the respective evaluation question.

### 4.1.1. Extent to which the needs of different user groups are met by e-Cohesion systems

| | |
|---|---|
| **EQ1** | **To what extent do the different types of e-Cohesion systems and key functionalities available meet the needs for exchange of data, documents and information of the different types of users of these systems?** |

[43] European Commission (2014). Commission Implementing Regulation (EU) No 1011/2014 of 22 September 2014 laying down detailed rules for implementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council as regards the models for submission of certain information to the Commission and the detailed rules concerning the exchanges of information between beneficiaries and managing authorities, certifying authorities, audit authorities and intermediate bodies. OJ L 286, 30.9.2014.

[44] European Union (2013). Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the CF, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the CF and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

[45] European Commission (2017). Questions & Answers on e-Cohesion Programming period 2014-2020 (ERDF, Cohesion Fund and ESF), EGESIF_17-0006-00, 06/04/2017; Building Blocks for e-cohesion: good practices from Member States, regions and programmes.

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Meets the needs if a large majority of different categories of users agree that the relevant key elements of the e-Cohesion systems meet their needs; if no major categories of (potential) users have been excluded from using the e-Cohesion systems;<br><br>Identify whether e-Cohesion systems are used by the relevant stakeholders throughout the various key processes;<br><br>A list of functionalities by type of user for which the e-Cohesion systems are mostly used / functionalities that are the most important;<br><br>Identify needs that are currently not being met. | Mapping of e-Cohesion systems;<br><br>Surveys of authorities and beneficiaries;<br><br>In-depth desk research and interviews under in-depth case studies. | While e-Cohesion systems are relevant to all institutional user groups, the extent of their relevance varies between different types of users and system processes; the systems are most extensively used to exchange information relating to payment claims and progress reports.<br><br>Beneficiaries still use other channels (e.g. e-mail) for data exchange relating to key processes such as signing contracts and providing documents for controls/verifications, as well as *ad hoc* communication<br><br>The most important functionalities to ensure relevance of e-Cohesion system is automatic calculations, availability of previously submitted data, and automatic embedded controls. |

One of the key challenges in assessing relevance relates to the identification and measurement of the needs and priorities of key stakeholders and target groups – in this case, the users of e-Cohesion systems. **The users of e-Cohesion systems are not a uniform group**, **and their perceived needs can differ substantially, with programme authorities on one side and the beneficiaries on the other.** The former group generally consists of MAs, IBs, CAs and AAs, which may also have different needs depending on the pre-existing systems, procedures and capacities. Thus, authorities constitute a varied user group, roughly divided into those who develop and maintain the system (usually MAs) and institutional users who either use the system to exchange information with beneficiaries, or use information submitted by beneficiaries (most often accessed through a monitoring information system) to carry out their daily tasks of programme implementation, monitoring, accounting and analysis (usually IBs, CAs and AAs). Beneficiary users can be roughly divided into public beneficiaries, who represent public institutions such as municipalities, public schools, etc., and private beneficiaries such as companies and organisations.

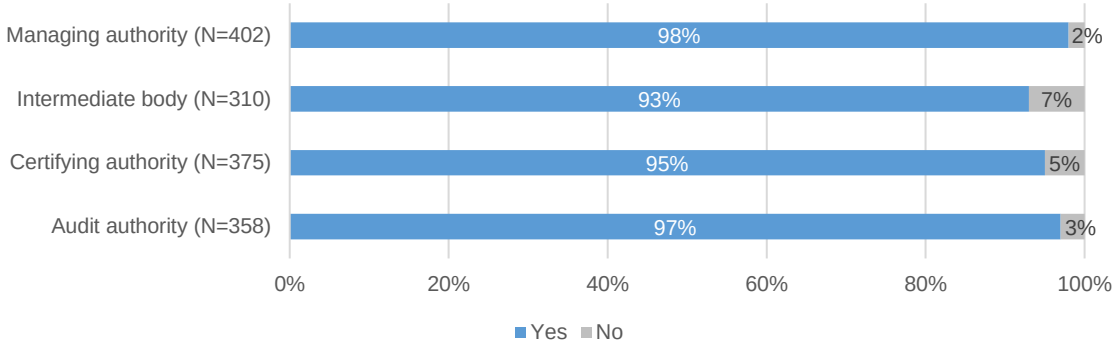
**The different user groups may use different systems and/or different parts of the same e-Cohesion system**. As discussed in Section 2.1, most authorities use transactional monitoring and accounting systems and/or analytical business intelligence systems to carry out their tasks. These systems make up the 'back office' IT infrastructure of programme implementation. The e-Cohesion system, on the other hand, constitutes the 'front office' and 'client-side' in the context of programme implementation. It provides functionalities that support the project management tasks of beneficiaries, their interactions with authorities, and the collection of information about projects (financial and physical targets and realisations) required for monitoring, accounting and analysing programme implementation in the 'back office'.

### *Access to e-Cohesion system by user group*

**No categories of (potential) users are excluded from using e-Cohesion systems**. In the survey, we asked authority representatives which authority user groups have access to the system, to gauge the relevance of e-Cohesion systems to these groups of users. The results (Figure 9) show that the vast majority of systems grant access to all user groups. The share of IBs and CAs that do not have access to the system is slightly higher compared with other authority groups, which may reflect the different institutional structures of

programmes. As is evident from the case studies and desk research-based mapping, in practice not all programmes have IBs or CAs; sometimes, these responsibilities are carried out by representatives of the MA.

**Figure 9. Ability to directly access information through the e-Cohesion system, by type of authority**



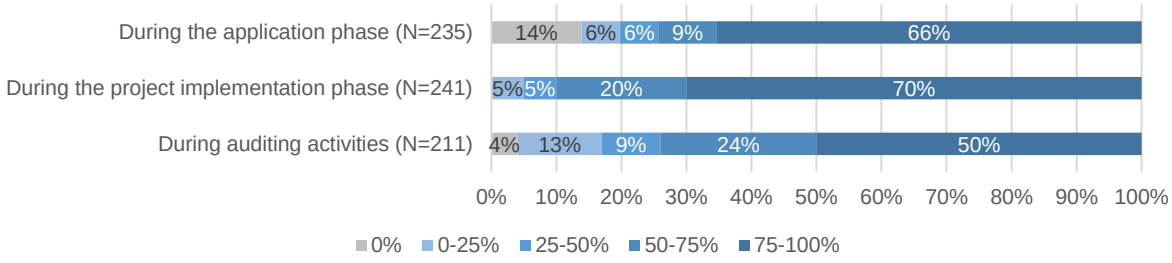

*Source: evaluation team, based on the survey of authorities - Q.16 "Are the following types of authorities able to access the information submitted by beneficiaries (such as payment claims, progress reports, etc.) through the indicated system?"*

*Note: Regarding the 2% of survey respondents that claimed that MAs do not have access to their respective system, we should consider the possibility that respondents mistakenly selected "no", as the evaluation team has not identified any specific examples when MA would not have access to information submitted by beneficiaries.*

### *Extent of authorities' use of the system for key processes*

**Overall, the systems are used extensively by the majority of institutional users during the key project phases we distinguished and analysed, and most extensively for project implementation activities.** However, when we look more closely at system use differentiated by institutional user group and key processes during each project phase, we see variation (Figure 10).

**Figure 10. Scope of the use of the systems by authorities for key processes**




*Source: evaluation team, based on the survey of authorities - Q.22 "What do you estimate to be the share of all relevant data exchanges that take place via the e-Cohesion system, as a proportion of total data exchanges between your public authority and beneficiaries?"*

In the survey of authorities, most institutional users of the various systems responded that the share of all relevant data exchanges that take place between them and the beneficiaries through the e-Cohesion system is around 75-100% (as a proportion of total data exchanges). According to these results, the system is most extensively used for **data exchanges during the implementation** phase (such as submitting progress reports, payment claims, etc.). Almost as many institutional users also reported that the systems are extensively used for **data exchange during the application phase**, but here a relatively larger proportion of users (14%) claimed that the system is not used for applications at all. Indeed, according to our mapping, 18 out of the 108 systems identified do not support the application process, and according to the results of the survey of beneficiaries, around 10% of all beneficiaries could only apply through other channels. Half of authority respondents reported that 75-100% of **data exchanged during auditing activities** took place through the system, with the other half mainly reporting that some data was exchanged through the system (only 4% reported that no data exchange relating to auditing activities took place through the system).

**The system is not used in the same way by the different user groups.** In the case studies, we mapped the ways in which each user group used the respective systems. This information is summarised below and gives some insight into the relevance of e-Cohesion systems to each user group.

**Table 14. Tasks for which systems are used, by type of user (for the six systems analysed in case studies)**

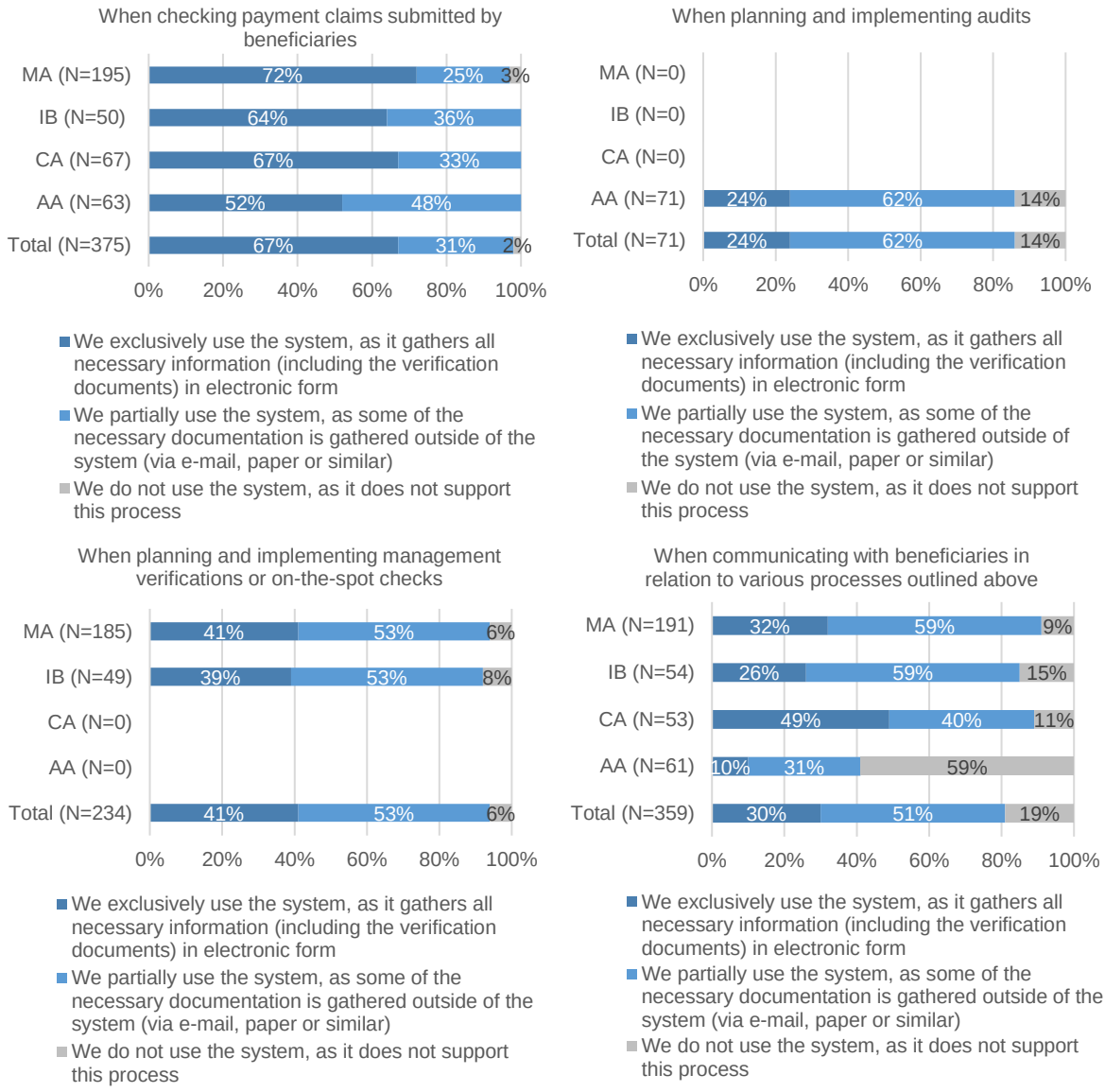
| Type of user | Main activity in the system |
|---|---|
| Applicants / beneficiaries | Almost all of the six selected systems, except for SL2014, support the submission of applications. All systems support beneficiaries in carrying out their key processes in the system. |
| First-level control (FLC) | This sub-category of institutional users is only relevant to eMS and SL2014 Interreg projects. Both systems allow financial controllers to check cost-related information. FLC uses verification documents that can be uploaded to the systems. The eMS later submits the certified costs to the lead partner. |
| Managing authority (MA) / joint secretariat (JS) | The MA may encompass many different departments and positions with varying sets of tasks that fall under MA responsibility (e.g., legal affairs, software development, grants development, etc.). However, the MA frequently use the system to exchange information with beneficiaries, as well as further going transactional processes of financial management, verification, and programme-related monitoring. Tasks that include information exchange with beneficiaries consider foremost the verification of progress reports. The operational tasks of MAs are frequently delegated to one or several intermediate bodies (or a joint secretariat in case of Interreg programmes). |
| Intermediate bodies (IBs) (other than the JS or FLC) | All selected systems provide functionalities for IBs to carry out their operational activities under the delegation of the MA, and the IBs usually constitute the first point of contact for beneficiaries.<br>In Estonia (e-Toetus), however, there are two levels of IBs; the second level carries out the same tasks as IBs in other institutional settings, while first-level IBs are responsible for the OP's rules and regulations. The main coordinator is the Ministry of Finance, but all line ministries must provide input into the rules and regulations that impact their policy areas. They prepare strategic documents, plan targets, output and results indicators, etc. |
| Certifying authority (CA) | All institutional structures have a dedicated CA except for e-Toetus, in which the CA is part of the MA in the grants payment department (but carries out CA-related tasks). The CAs use the systems to certify expenses and payment requests to the EC, to generate financial data for expense reports, and to make financial corrections. |
| Audit authority (AA) | Almost all selected systems support AA access to the system. The main distinction here is between having read-only access (SL2014, eMS) and interactive access (e-Toetus and Balcão2020) to carry out their tasks in relation to programming, planning, implementation, monitoring and the synthesis of the Annual Control Report. |

*Source: evaluation team, based on interviews held with authority representatives.*

**Different institutional user groups also use the systems to different extents**. **Therefore, the systems are not equally relevant to all institutional user groups**. To provide more granular data on the extent to which different authority representatives use the system for project implementation activities, the survey of authorities asked each institutional user group about the extent to which the system is used for tasks relating to their areas of responsibility (Figure 11). Here, we can see that **the process of payment claims is where the system is used most extensively**. The processes for which the system is used the least are, first, when communicating with beneficiaries; and second, when planning and implementing audits. We can also see that **the systems are used most extensively by representatives of MAs and CAs, and least by AA representatives**. This is especially the case in relation to communication with beneficiaries, with almost 60% of AA respondents claiming that the systems do not provide the functionality for them to communicate with beneficiaries. Indeed, as indicated during the interviews with authority

representatives, AAs usually communicate with beneficiaries via e-mail and/or by telephone with regard to additional information, clarifications and audit and management verifications. As indicated in Table 14, AAs may only have read-only access to the systems. The lack of interactive access to carry out their tasks in the system could diminish the relevance of the systems to this user group.

**Figure 11. Use of e-Cohesion systems during key processes, by type of authority**



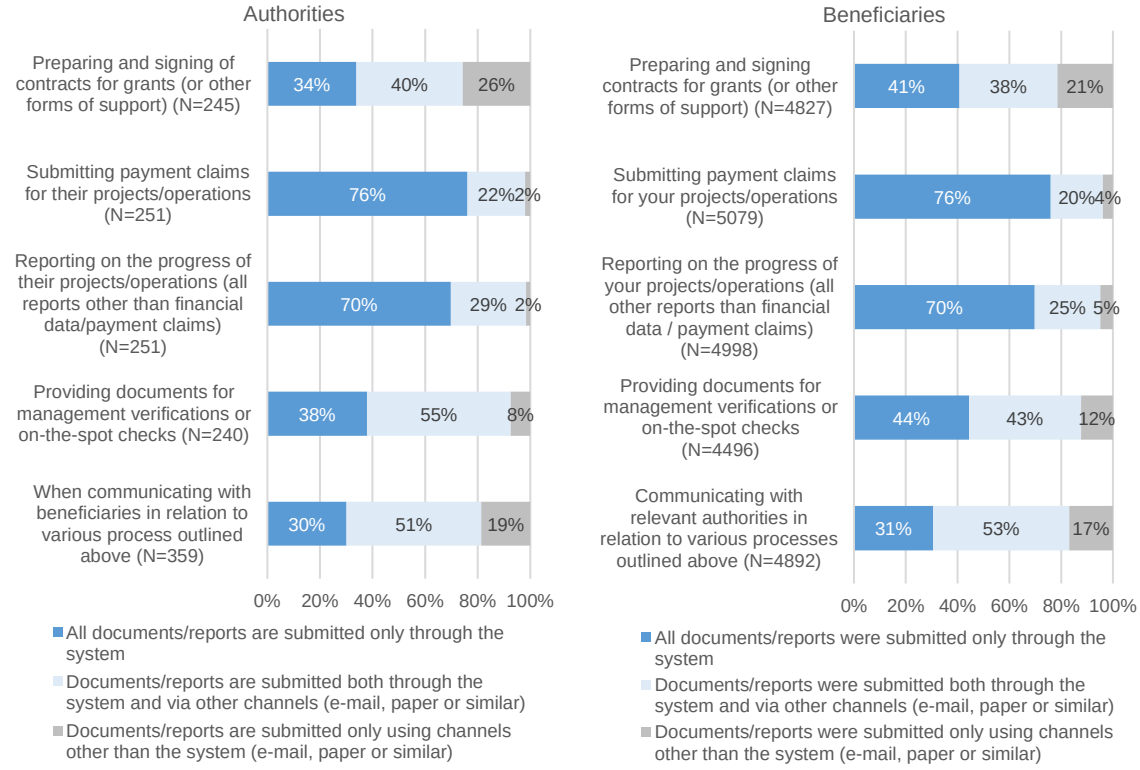

*Source: evaluation team, based on the survey of authorities – Q.16 "To what extent do you use the indicated e-Cohesion system (or the integrated system used only by authorities) for the following processes:"*

### *Extent of beneficiaries' use of the system for key processes*

**Like authorities, beneficiaries use e-Cohesion systems most extensively for activities relating to project implementation, such as submitting payment claims and progress reports. Beneficiaries use the system least for activities relating to the preparation/signing of contracts and to provide documents for management verifications and/or on-the-spot checks**. This conclusion is supported by the results from the survey of beneficiaries, in which we asked beneficiary respondents to what extent they use the e-Cohesion system to exchange data and information in relation to their key processes. We also asked authority respondents the same question (i.e. we asked for their estimation of how extensively their beneficiaries use the system for key processes). As can

be seen from Figure 12, the authority and beneficiary responses correspond well. The majority within both groups argue that beneficiaries use the system almost exclusively to exchange information relating to progress reports and payment claims. Documents for management verifications and/or on-the-spot checks are mostly submitted either through the system or via other channels. The tasks for which the system is used least are communication between authorities and beneficiaries in relation to key processes, and the preparation/signing of contracts.

**Figure 12. Coverage of the key processes relating to the implementation phase (surveys of authorities and beneficiaries)**




*Source: evaluation team, based on the survey of authorities – Q.15 "To what extent do beneficiaries use the indicated e-Cohesion system for the following processes relating to the projects/operations in the OPs that you manage:" and Q.16 "To what extent do you use the indicated e-Cohesion system (or the integrated system used only by authorities) for the following processes: "When communicating with beneficiaries in relation to various process outlined above"; survey of beneficiaries – Q.12 "When implementing your project/operation, to what extent did you use the indicated electronic data exchange system for the following processes:"*

**Parallel channels for exchanging data and information are used the least for payment claims and progress reports, while parallel channels are more commonly used to exchange data and information related to the preparation and signing of contracts, as well as providing documents for management verifications and/or on-the-spot checks**. Due to some systems being overrepresented in the survey, we also disaggregated and categorised the beneficiary responses on parallel data exchanges in relation to key process at the system level; 96 out of 108 systems had sufficient responses for this question (see Table 15). By doing so, we see that approximately 50% of the systems allow beneficiaries to use the system almost exclusively for exchanging data relating to payment claims and progress reports, whereas the corresponding number for the aggregated beneficiaries' survey results is around 70% (see Figure 12).

**Regardless, the general pattern at system and beneficiary level remains clear; systems are more frequently used by beneficiaries for payment claims and progress reports. The systems are therefore more relevant to them for these purposes and less relevant for processes relating to the preparation and signing of contracts, as**

**well as providing documents for management verifications and/or on-the-spot checks.**

**Table 15. Extent of parallel data exchanges taking place outside the system during key processes (system-level)**

| Key processes | Limited parallel exchange | Moderate parallel exchange | Extensive parallel exchange |
|---|---|---|---|
| Preparing and signing contracts for grants (or other forms of support) (No. of systems=96) | 19% | 20% | **61%** |
| Submitting payment claims for your projects/operations (No. of systems=96) | **52%** | 28% | 20% |
| Reporting on the progress of your projects/operations (all other reports than financial data / payment claims) (No. of systems=96) | **43%** | 33% | 24% |
| Providing documents for management verifications or on-the-spot checks (No. of systems=96) | 17% | 30% | **53%** |
| Overall (No. of systems=96) | 24% | **46%** | 30% |

*Source: evaluation team, based on the survey of beneficiaries – Q.12 "When implementing your project/operation, to what extent did you use the indicated electronic data exchange system for the following processes:"*

**The functionalities considered most important by beneficiaries are automatic, embedded controls**, which immediately check for missing or incorrect data, **automatic calculations** (helping users to calculate reported sums, e.g. planned costs, remaining budget to be invoiced, actual financing, etc.) and the **availability of previously submitted data** (may be pre-filled) (see Figure 36). These three highest-ranked functionalities are highly relevant to the submission correct payment claims and progress reports. As seen in the answers from the open-ended survey question on system weaknesses, the absence or limited functioning of such functionalities was frequently mentioned as a major weakness of the respective system. For more information on the most important functionalities, see Section 4.6.2.

### 4.1.2. Adaptation to the evolving needs of relevant stakeholders

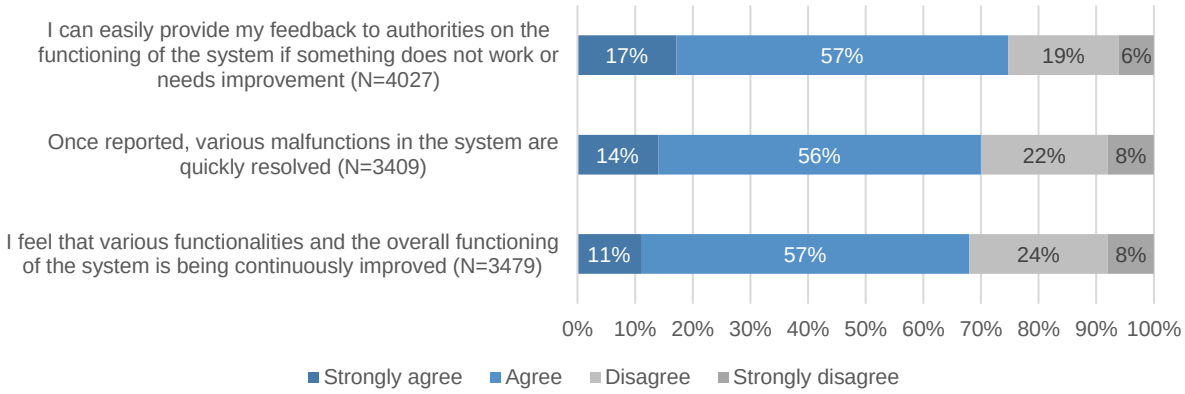
| EQ2 | **How did the e-Cohesion systems adapt to the evolving needs of the relevant stakeholders?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Identify evidence that users' feedback is being collected by authorities;<br>Identify whether the systems are being further developed and improved. | Survey of beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. | Most e-Cohesion systems collect user feedback in order to continue adapting to the evolving needs of their stakeholders. The findings suggest that there is a correlation between the attention paid to user feedback and the perceived user-friendliness of systems. |

**To ensure the relevance of the e-Cohesion system to its users, the identification of users' needs through the collection of feedback about the system and its functioning is essential.** Indeed, during the webinar, most participants cited that '*Feedback/demands submitted by users*' is the key driver of improvements to e-Cohesion systems. While the various systems have adopted this approach to system development to varying extents, the overall trends indicate that most beneficiaries feel they are given adequate channels to

convey their feedback on the system, that malfunctions are quickly resolved, and that the systems are continuously improved.

**Figure 13. User feedback and system improvement (survey of beneficiaries)**




*Source: evaluation team, based on the survey of beneficiaries – Q.20 "Please assess the following statements on the collection of feedback by authorities and how it results in improvements of the electronic data exchange system:"*

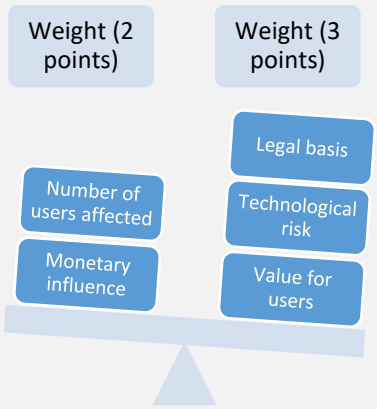
**The collection of user feedback and its incorporation into system development tends to produce higher levels of user-friendliness.** From the beneficiaries' survey data, we can see that continuous system development and improvement are important to beneficiaries. Systems that are continuously improved on the basis of user needs are more likely to exhibit a high level of user-friendliness, or to result in substantial benefits and simplification for beneficiaries. While we are unable to establish a causal relationship between the two (i.e. continuous development vs. high user-friendliness), we observe a positive relationship between these two variables. This notion is further strengthened by the data from the case studies. In this sample, those e-Cohesion systems about which user feedback is continuously collected and consistently taken into consideration, tend to enjoy a higher level of reported user-friendliness.

**Box 3. Case study example on the relationship between continuous development with the help of user feedback, and high levels of user-friendliness**

**From the insights shed by the in-depth case studies, we can see that those systems which regularly collect user feedback and use this to continuously improve, tend to enjoy higher levels of user-friendliness.**

- **SFINGE 2020** – collects feedback both from beneficiaries and from public authorities through a specific section of the system that allows malfunctions to be signalled or requests to be submitted. This has enabled the system developers to update reportedly cumbersome processes. In this way, the process for change requests was significantly streamlined. Due to the COVID-19 pandemic, the system was updated further to make it possible to conduct all the on-the-spot checks through the system. This is a prime example of how an e-Cohesion system can be adapted to meet the evolving needs of its users.
- **Balcão 2020** – the high scores for user-friendliness and usefulness given in the survey by beneficiaries of this e-Cohesion system are reflected in MAs' / the system developers' commitment to systematically consider the needs and feedback of authorities and beneficiaries. This applies both to its early system development phase, and to continuous improvements.

- **e-Toetus** – this e-Cohesion system explicitly emphasises its client-focus and commitment to user involvement. Representatives of the e-Toetus MA also detailed their synthesis of a **development methodology**, in which development tasks in the product backlog are prioritised on the basis of specific criteria that are weighted according to their relative importance: value for users (3), legal basis (3), technological risk (3), monetary influence (2), and the number of users affected (2) (see image). This has enabled a structured and transparent development process, with a strong focus on UX (user experience).




- One system in the case study sample (eMS) that lacked a focus on user feedback also exhibited lower levels of user-friendliness, according to the results of our survey. While this can in no way be interpreted as a causal relationship, it reiterates the importance of user feedback and its use in system development to generate higher levels of user satisfaction. While the eMS is a hugely successful and noteworthy system in terms of its wide programme coverage, its commitment to harmonisation and simplification, as well as it openness to extensions, yielded lower scores (in comparison to the high scores received by other case study examples) for user-friendliness and user satisfaction in our surveys. During the interviews with authority representatives for eMS, they conceded that a potential reason for this is the lack of involvement in system development of some users, mainly beneficiaries and first-level controllers (FLCs). The development of JEMS, the system that will replace eMS in the 2021-2027 programming period, have learned from this experience. Current beneficiaries as well as FCLs are actively involved in the JEMS development process.

*Source: evaluation team, based on in-depth interviews with authority representatives.*

### 4.1.3. External factors that impede the relevance of e-Cohesion

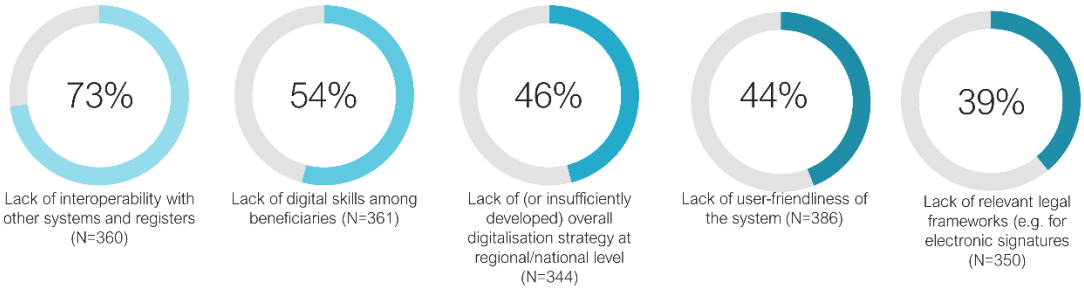
| EQ3 | What external factors make an e-Cohesion system (more or less) relevant for different types of users? |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| A list of contextual factors influencing relevance that were mentioned by different types of respondents. | Survey of authorities. | Lack of interoperability with other electronic systems and registers constitutes a key challenge to ensure relevance of e-Cohesion systems. Similarly, the lack of relevant legal frameworks (e.g. for legally valid e-signature) further increase reliance on parallel channels of data exchange. |

**For stakeholders to fully reap the benefits of e-Cohesion, certain external factors must be in place that form part of the context of the e-Cohesion system**. We asked authorities to assess various factors that could act as a barrier to the efficient functioning of e-Cohesion in their country (Figure 14). Most authorities argued that the lack of interoperability with other systems and registers was the most significant barrier. Also, lack of digital skills among beneficiaries, lack of digitalisation strategy, poor system user-friendliness, and a lack of relevant legal frameworks were considered significant factors in impeding system relevance. Indeed, if the system does not offer user-friendly features (especially in cases where digital skills among beneficiaries is low), e.g., if the system does not pre-fill relevant data, and the beneficiary cannot retrieve this data from interconnected registers/databases, such data may be exchanged more easily through other channels (e.g. by sending documents via e-mail). Similarly, if the country lacks a nationally recognised, legally valid e-signature feature (i.e. some form of nationally accepted electronic identification), the e-Cohesion system cannot function fully electronically, and beneficiaries are more inclined to use parallel channels for data exchange. Thus, it is of vital importance

that the context in which the e-Cohesion system is situated fully enables the use of the electronic exchange of information.

**Figure 14. Relevance of external factors impeding the efficient functioning of e-Cohesion systems (survey of authorities)**




*Source: evaluation team, based on the survey of authorities - Q.27 "Are the following problems relevant or not in your country/region for the efficient functioning of the e-Cohesion system?"*

*Note: sum of "very relevant" and "somewhat relevant"*

## 4.2. Coherence

**Coherence** can be defined as the alignment of and cooperation between different policy frameworks, programmes, and actions, leading to the better attainment of their objectives. In this evaluation, coherence is understood more narrowly: **it is the analysis of coherence between the different authorities and systems for the electronic exchange of information, for the purpose of implementing EU Cohesion policy**. This evaluation criterion is further operationalised into three evaluation questions, which also correspond to three levels of interoperability. First, internal coherence on the programme level is closely related to the key principle of **interoperability** (see Section 4.3 on Effectiveness), which refers to the extent to which authorities of a specific programme have access rights to the system and can share data among themselves. This can then be extended to coherence at a national level (the second level of **internal coherence**), and at EU level (**external coherence**). The evaluation questions and judgement criteria are provided below, each preceding the relevant section that provides an assessment of the respective evaluation question.

### 4.2.1. Coherence at programme level

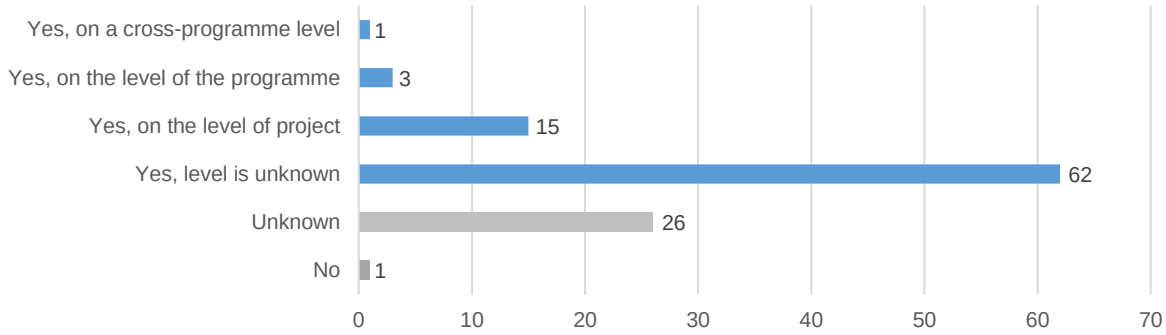
| EQ4.1 | **To what extent do authorities of the programme have access rights to the system and share data among themselves?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| The systems are internally coherent in terms of the re-use of information if information only needs to be encoded once by beneficiaries, and is shared between different authorities. | Mapping of e-Cohesion systems;<br>Survey of authorities. | Across the e-Cohesion systems identified, there is a high level of internal coherence, defined as the extent to which programme authorities have access rights to the system and can share data among themselves, once submitted by beneficiaries. |

**According to our findings, there is a high level of internal coherence among the e-Cohesion systems identified; most e-Cohesion systems enable the relevant authorities with the appropriate access rights to view and share relevant data among themselves.** Our mapping data (see Figure 15) indicates that at least 75% (81 out of the 108) of the e-Cohesion systems identified enable all authorities access to the relevant data (at project-, programme- or cross-programme level). However, among the remaining 27 systems there is only one system for which we can deduce with some certainty the system

does not share data with all relevant authorities once submitted by the beneficiary. For the remaining 26, this is unknown. Given these shortcomings, the mapping information is complemented by survey data, which shows that almost all authorities can access information and data through their respective e-Cohesion systems (see Figure 9). Taken together, the desk research-based mapping and survey results reveal a high level of coherence among e-Cohesion systems.

**Figure 15. Data shared with authorities by beneficiaries using once-only encoding**




*Source: evaluation team based on desk-research based mapping.*

**This high level of internal coherence at programme level also enables the fulfilment of the key principle of once-only encoding, which ensures that beneficiaries do not need to resubmit the same information twice to different authorities, but that this information, once submitted, is shared.** Notably, almost all types of authorities have access to the information submitted by beneficiaries (e.g. payment claims, progress reports, etc.) through the indicated systems. However, not all systems have the same institutional structure (i.e. not all MAs delegate tasks to IBs). For example, in Sweden there are no IBs, only regional MAs, so this may account for some of the negative responses towards access by certain types of authorities. These results indicate that the level of coherence of e-Cohesion for the 2014-2020 programming period is high and well-developed.

### 4.2.2. Coherence at national level

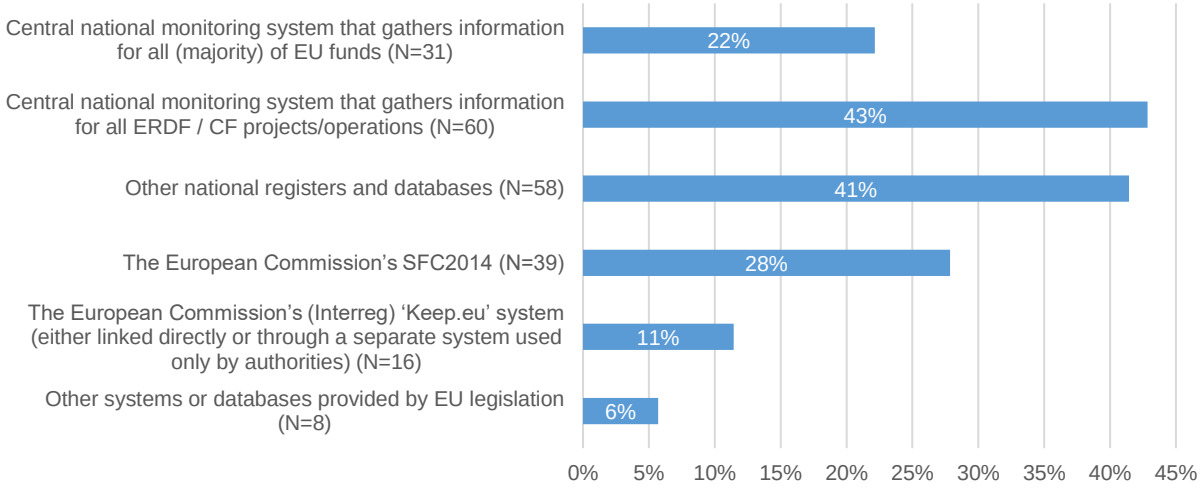
| EQ4.2 | **To what extent are the e-Cohesion systems introduced and/or developed for the period 2014-2020 compatible and/or complementary with relevant national register databases and other systems of electronic exchange for the administration of other EU funds in the Member States?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| The systems are compatible and complementary if e-Cohesion systems are compatible with other public electronic systems, registers and databases in the Member States, and can source and exchange information with them. | Mapping of e-Cohesion systems;<br>Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. | Coherence at national level is not uniformly developed across e-Cohesion systems, and the results here are varied. It is slightly less common for e-Cohesion systems to be connected to national registers/databases than to a central monitoring system. |

**In terms of internal coherence at national level, the overall picture is not straightforward, as it is not uniformly developed across e-Cohesion systems. Internal coherence varies depending on what type of interconnection is considered; the data collected indicate that it is more common for e-Cohesion systems to be connected to a central monitoring system than to national registers/databases.** In the survey of authorities, we asked institutional users which other systems their e-Cohesion system was linked to. Most respondents left this question blank (N=216), while many answered: 'do not

know/cannot answer" (N=99). Among the remaining respondents (N=140), most answered that their e-Cohesion system is connected to a central monitoring system for ERDF/CF operations, and to other national registers and databases (Figure 16).

**Figure 16. Links between e-Cohesion systems and other registers and databases (survey of authorities)**




*Source: evaluation team, based on the survey of authorities – Q21 "With which other systems is the e-Cohesion system linked? (i.e. the two systems exchange information directly, without the need to extract information from one system and upload it to the other) (multiple answers)"*

*Note: because this is a multiple-choice question, the total sum of responses adds up to more than 100%.*

**Internal coherence is difficult to assess due to conflicting data.** Based on our mapping of systems, almost one-third of e-Cohesion systems identified (31 out of the 108) are linked to other national/governmental electronic databases/registers, and the corresponding number for central monitoring systems is almost two-thirds (68 out of the 108). The survey results, on the other hand, indicate that more than 40% of respondents claimed that e-Cohesion systems are connected to national registers/databases and to central monitoring systems.

**While it is difficult to draw definitive conclusions regarding internal coherence, it remains clear that overall, there are significant disparities between e-Cohesion systems in this regard.** It is also difficult to deduce the reasons for these disparities in reported interconnectivity. One likely explanation may be, *inter alia*, a lack of harmonisation and integration between definitions of common concepts and protocols at a programme/cross-programme and national level, which reduce the complementarity and compatibility of the various computerised systems (see Box 4). On the other hand, such compatibility may exist, but other issues of a legal and technical nature may negatively affect the ease with which such interconnections can be established.

**Indeed, despite the difficulties experienced in establishing internal coherence, there appears to be a need for it among both beneficiaries and authorities.** The open-ended question posed in both the authorities' and beneficiaries' surveys on whether there any documents/processes/functionalities not integrated into the e-Cohesion system reveals that some respondents required stronger systems integration with national databases and other e-Cohesion systems. Some beneficiaries reported that the same system could be used differently in different regions, slowing down collaboration between partners. The lack of coherence between different e-Cohesion systems in countries with a decentralised e-Cohesion structure may add an additional burden to beneficiaries. In general, some countries reportedly lack a unified e-governance system, thus preventing e-Cohesion systems from accessing national registrars and databases. Types of integration needs vary from simple lists of educational institutions and real-estate cadastres to public procurement and electronic invoicing systems. Authorities also mentioned that beneficiaries had to use alternative systems, or to submit parts of an application manually, because the e-Cohesion

system did not integrate certain functionalities such as bids, contracting, invoices, etc., as these were built upon other public electronic systems. In general, the development of the systems' coherence should be seen as a continuous process of state systems integration.

Analysing the in-depth case studies (Task 5), we can distil good practices from those systems that showcase strong internal coherence at national level. In particular, the Estonian e-Cohesion system, e-Toetus, demonstrates the usefulness of internal interoperability between electronic systems.

**Box 4. Good practice example of internal coherence – Estonian e-Cohesion**

**Internal coherence in Estonia is well-developed on several levels;** the integration of the e-Cohesion system with a central monitoring system, which is then linked to several national registers/databases, enables all actors involved in the implementation of a programme to work together at organisational and technical levels. It also ensures effective communication between computerised systems, as well as the exchange and re-use of information and knowledge at national level.

- First, all authorities involved with the Estonian OP have access (based on their predefined user roles) to the **structural funds operating system (SFOS**), which stores all monitoring data and proceedings collected from the interconnected e-Cohesion system **e-Toetus.** This means that the authority representatives and institutional users can access all relevant data that is submitted to the e-Cohesion system, and there is no need for beneficiaries to enter the same information more than once.
- Second, the SFOS has extensive interconnections with other computerised systems such as the accounting system, population register, business register, criminal records database, etc. This means that all data relevant to programme implementation (including beneficiary and applicant data) can easily be retrieved and/or verified. This gives authorities access to a wealth of data to carry out full data checks. It enables authorities to cross-check information, reduce double-funding and fraud by detecting patterns between beneficiaries and potential red flags.
- Third, the internal coherence of Estonia is based on the practice of a '**single source of truth'**. This means that only one national database or register collects one type of information. All other databases/systems/registers that need to use this information refer only to the original source, and make sure their information is in accordance with it. Thus, no duplicate values or parallel sources of information exist that can distort the authenticity of the original source. Moreover, the accuracy and veracity of each source is increased by the others, rather than presenting conflicting information.

It should be noted that the high level of internal coherence of e-Cohesion in Estonia is, by and large, a result of the country's long-term **digitalisation agenda** to facilitate citizen and state interactions and information exchange through electronic solutions. Standardisation and harmonisation of concepts and protocols are among the key factors that have enabled this strong internal coherence, such as the widespread use of nationally recognised standard protocols, which significantly simplify the process of interconnecting computerised systems.

*Source: evaluation team, based on in-depth interviews with authority representatives.*

### 4.2.3. Coherence at EU level

| EQ5 | **To what are extent the e-Cohesion systems compatible and/or complementary with the System for Fund Management (SFC) and other Commission's systems of electronic exchange of data, documents and information (e.g. keep (Interreg))?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| The systems are compatible and complementary if e-Cohesion systems are or could be linked to SFC 2014 (as well as to any other relevant systems such as keep.eu (Interreg)). | Mapping of e-Cohesion systems;<br>Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. | Coherence at EU level was limited during the 2014-2020 programming period; only a minority of systems were connected to European management and/or monitoring systems for ESIF, such as SFC or keep.eu (the latter is only relevant for Interreg). |

**Overall, the assessment can be drawn that the external coherence of e-Cohesion systems during the 2014-2020 programming period was limited**; **only a minority of**

**systems were connected to European management and/or monitoring systems for the ESIF, such as SFC or keep.eu.** Indeed, external coherence among the EU27 is less developed than internal coherence and has only been established among a minority of e-Cohesion systems. According to our mapping data, around one-fifth (24 out of 108) of the systems identified are electronically connected to the SFC, and only one system is connected to keep.eu (the database for aggregated data regarding projects and beneficiaries of EU cross-border, transnational, and interregional cooperation programmes among Member States, and between Member States and neighbouring or pre-accession countries). According to the survey data (see Figure 16) 28% of respondents claimed that e-Cohesion systems are connected to the SFC, and 11% that the systems are connected to keep.eu. While the desk research-based mapping and survey data are not wholly in alignment, it is clear from both that fewer e-Cohesion systems are connected to systems at EU level, compared with systems at national level.

**However, it is important to note that both the SFC and keep.eu are, most often, connected to the central monitoring system for programme implementation, rather than to the e-Cohesion system itself.** While e-Cohesion systems collect the relevant data, it can, in many instances, be the central monitoring system and/or IT back-office infrastructure that stores it. Thus, the low levels of external coherence found in this evaluation might reflect differences in programme implementation IT infrastructure, rather than a lack of external coherence in the sphere of programme implementation *per se*.

Even so, with regard to the connection of the SFC and central monitoring systems, only two out of the six e-Cohesion systems we have analysed in depth in the case studies make use of the automatic interface solution provided by SFC2014. During the interviews with authority representatives during the case study preparation, it became clear that the reason many systems did not make use of the SFC automatic interface solution is not due to a lack of compatibility or any type of technical issues. Rather, it was an issue of cost-efficiency. According to several authority representatives, the information required by the EC were not very extensive (in terms of the amounts of data and how frequently it is required for submission) during the 2014-2020 programming period. Thus, the authorities conceded that the cost of establishing an automatic link to the SFC would exceed the cost of manually transferring this information. However, the scope and frequency of information required to be submitted to the SFC is higher for the 2021-2027 programming period, and thus several authority representatives reported that they were reconsidering the cost-efficiency and implementation of an automatic interface connection.

## 4.3. Effectiveness

**Effectiveness, in the context of e-Cohesion, refers to the extent to which the objectives and intended results are achieved**. Our assessment of effectiveness explored whether:

- e-Cohesion systems contain the required functionalities, and cover the key principles and processes;
- e-Cohesion systems delivered the expected simplification and reduction in administrative costs and administrative burdens.

We evaluated the implementation of e-Cohesion systems in comparison to the provisions defined in the Common Provisions Regulation[46] and Implementing Regulation[47]. These

[46] European Union (2013). Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the CF, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the CF and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

[47] European Commission (2014). Commission Implementing Regulation (EU) No 1011/2014 of 22 September 2014 laying down detailed rules for implementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council as

have been structured and assessed according to the key principles, processes, functionalities and data security requirements (see also the intervention logic provided in Section 2.2). The evaluation criterion of effectiveness is further operationalised into three evaluation questions, two of which are paired together due to their thematic similarity. The evaluation questions are provided below, accompanied by their judgement criteria, which precede each of the relevant sections providing an assessment of the evaluation question.

### 4.3.1. Compliance with the key requirements of e-Cohesion

| EQ6 | **To what degree does the operation of the e-Cohesion system implement the legal requirements?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Effectiveness is deemed high if the majority of the legal requirements are implemented in practice, as per the mapping framework:<br>▪ principles;<br>▪ key processes;<br>▪ functionalities;<br>▪ data security requirements. | Mapping of e-Cohesion systems;<br><br>Surveys of authorities and beneficiaries;<br><br>Webinar with authorities;<br><br>In-depth desk research and interviews under in-depth case studies. | The fulfilment of the key requirements on principles, processes, functionalities, and data security requirements is mixed; the requirements with regard to the principles, functionalities and data security are met by most e-Cohesion systems (although the last of these is difficult to assess);<br><br>However, most e-Cohesion systems still use parallel channels for their key processes (to a limited extent for progress reports and payment claims, but extensively so for the exchange of data relating to audit and management verifications);<br><br>To further increase the effectiveness of e-Cohesion, the features and functionalities necessary to facilitate wholly electronic exchanges of information must be implemented (e.g. integrated e-signature features). |

#### *Key principles*

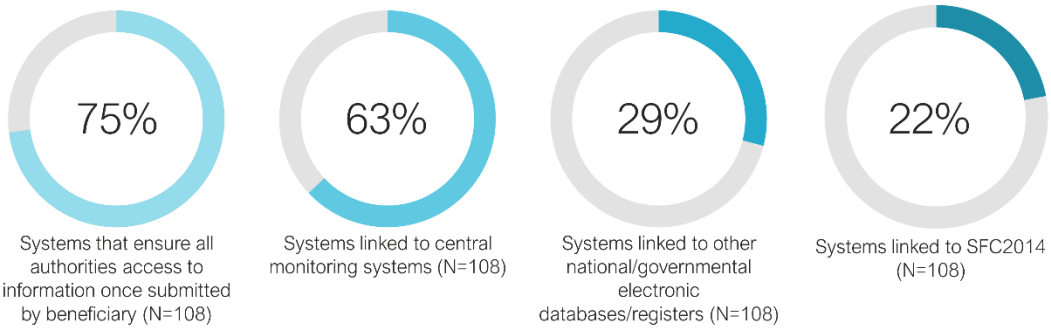
Under the heading of key principles, we explored how e-Cohesion systems address interoperability and once-only encoding.

The principle of interoperability refers to the notion that "all the bodies involved in the implementation of a programme should work together at the organisational and technical levels in ensuring effective communication between computerised systems, as well as the exchange and re-use of information and knowledge".[48] As outlined in the previous section (4.2 Coherence), almost all of the systems we identified fulfil this requirement. However, the findings from the mapping and survey indicate that **interoperability at a national level is less common and is not uniformly developed across e-Cohesion systems**. In addition, internal coherence varies depending on which type of interconnection is considered; it is less common for e-Cohesion systems to be connected to national registers/databases than to a central monitoring system. **Interoperability at EU level (i.e. integration with the SFC, keep.eu, etc.) has only been established by a minority of e-Cohesion systems.**

regards the models for submission of certain information to the Commission and the detailed rules concerning the exchanges of information between beneficiaries and managing authorities, certifying authorities, audit authorities and intermediate bodies. OJ L 286, 30.9.2014.

[48] Questions & Answers on e-Cohesion Programming period 2014-2020 (ERDF, Cohesion Fund and ESF), EGESIF_17-0006-00, 06/04/2017; Building Blocks for e-cohesion: good practices from Member States, regions and programmes, Version 2, December 2013.

**Figure 17. Interoperability of e-Cohesion systems (mapping data)**




*Source: prepared by the evaluation team, based on mapping data.*

**Indeed, interoperability at national and EU levels represents a significant challenge for authorities.** Whilst these levels of interoperability were not formally required during the 2014-2020 programming period, they remain significant to e-Cohesion. In the survey, we asked the authorities a question on the challenges and significant barriers to a well-functioning e-Cohesion system (Figure 28 on page 98). The challenge that was considered most important by the greatest number of respondents is the **lack of interoperability with external applications and databases**. During the webinar with authorities, we asked participants to further elaborate on this difficulty. According to them, the most common issue in relation to extending the principle of interoperability to national and EU levels is the need for further harmonisation and standardisation in terms of common definitions of concept and information requirements at a (cross-) programme level.

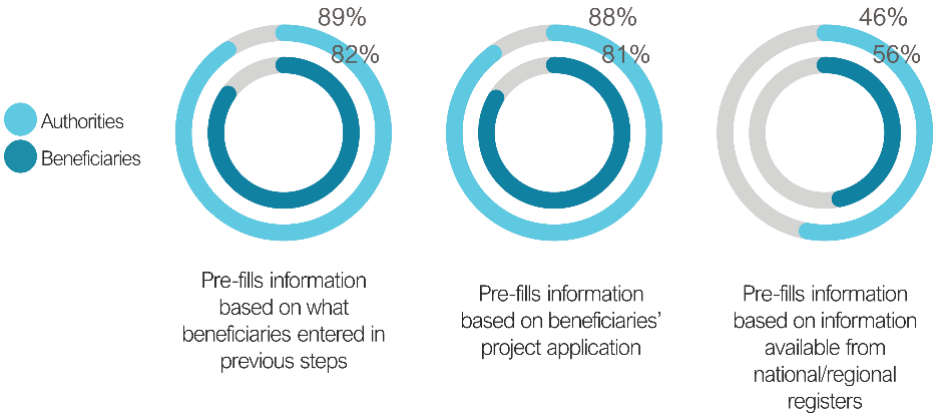
**Table 16. Webinar poll: challenges to interoperability**

| In your view, which aspect of interoperability (with other systems and registers) represents the biggest challenge? | Votes |
|---|---|
| Common definition of concepts, information needs, data fields, forms etc. at programme and cross-programme levels | 17 |
| Technical connection to external databases (governmental registers etc.) | 8 |
| Legal aspects that need to be solved first | 7 |
| Technical connection to transactional monitoring system (further data processing) | 2 |

*Source: prepared by the evaluation team, based on Mentimeter polls held during the webinar 21/11/2021.*

**Interoperability is closely related to a second key principle – that of once-only encoding, which is fulfilled by most systems, based on information previously submitted by the beneficiary.** Indeed, if all relevant authorities have access rights to the system and share the data submitted by the beneficiary among themselves, there is no need for the beneficiary to submit the same information more than once. The principle of once-only encoding thus relates to the systems' ability to either: i) internally re-use and not ask for the same information twice; and/or ii) pre-fill data fields for which information is requested that has already been submitted by the beneficiary. Both authority and beneficiary respondents in the surveys were asked what kinds of information (i.e. its source) is pre-filled in their respective systems, and how useful they consider this to be. The beneficiaries' survey results correspond well with the results of the survey of authorities.

**Figure 18. Overview of the extent to which information is pre-filled, % of respondents who 'strongly agree' or 'agree' (surveys of authorities and beneficiaries)**



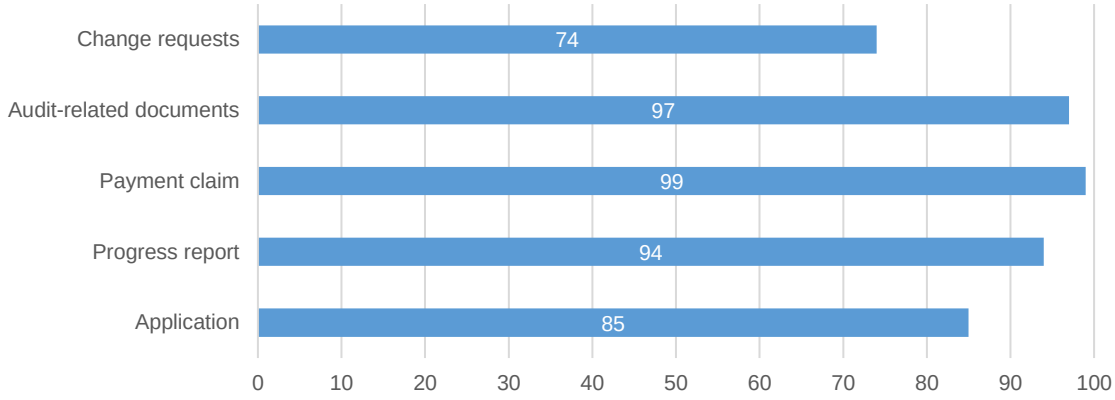

*Source: evaluation team, based on surveys – survey of beneficiaries - Q.13 "Does the electronic data exchange system re-use (pre-fill) some information that you have submitted previously, or obtain such information from other sources?"; survey of authorities - Q. 19 "When a beneficiary implements a project, does the e-Cohesion system re-use (pre-fill) some information already submitted by the beneficiary, or obtain such information from other sources?"*

**Pre-filled information is mostly based on information previously submitted by the beneficiary, rather than on information from other, interconnected registers/databases**. Indeed, most beneficiary and authority respondents (over 80%) confirmed that information, submitted once during previous steps and in the project application, is re-used and pre-filled into the system. Almost as many respondents consider this function useful. However, only around half of the authorities and beneficiaries responded that information from national/regional registers is pre-filled. As outlined in the assessment of Coherence (section 4.2), the interconnection of national registers is not yet a widespread practice among all e-Cohesion systems, so this result is unsurprising. Indeed, the polls and discussions held with authority representatives during the webinar confirm that while the majority find interconnection with other national registers useful, an even greater majority concede that such functionality is difficult to set up and maintain. As shown in Table 16, this is primarily due to a lack of harmonisation of concepts, definitions, requirements, etc. The existence of a well-developed, digital infrastructure of public databases using nationally recognised standard protocols makes it easier to establish linkages between these computerised systems. In such cases, the principle of once-only encoding extends from the individual e-Cohesion system to the national level (see the good practice example from Estonia in Box 4).

### *Key processes*

**The majority of the e-Cohesion systems identified support the key processes and even go beyond the requirements set by the European Commission, by incorporating the application process.** Almost 75% of the identified 108 e-Cohesion systems cover all of the key processes, which refer to the ability of users to create, submit, modify, check and approve progress reports and payment claims, and to exchange information relating to audits and management verifications. When measured at the level of each individual key process, this rises to around 80%. **However, parallel channels are still being used to exchange data by most systems.** Beneficiaries of most of e-Cohesion systems still use parallel channels to exchange data, even when the system in question supports the electronic exchange of information in relation to that specific process. Most often, supplementary information is exchanged through e-mails.

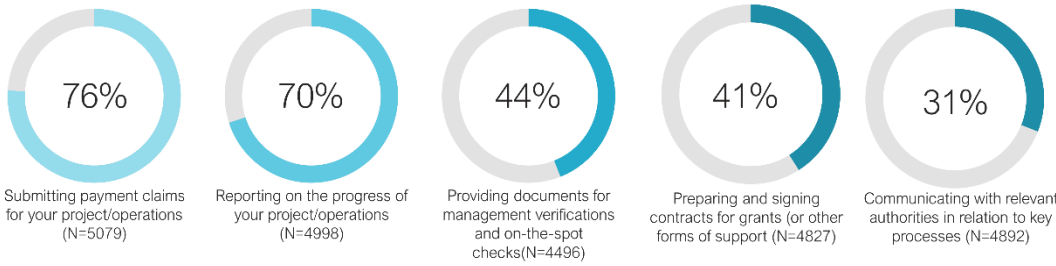
**Figure 19. Number of e-Cohesion system that support key processes**




*Source: prepared by the evaluation team, based on the mapping.*

**Whilst almost all systems support the key processes, the extent to which the system is (exclusively) used to exchange information for these processes varies. The exchange of information relating to payment claims and progress reports are the processes supported most extensively by e-Cohesion systems; the exchange of information relating to management verifications and on-the-spot checks, as well as signing contracts for grants (or other forms of support) are least widely supported** (Figure 20)**.** To improve the effectiveness of systems, there is a need to eliminate the use of parallel data exchange with regard to audit-related activities and contract signing, by ensuring that the necessary features and functionalities to facilitate these processes are implemented. One example is the legal validity of digitally signed documents, and the technical provision of an integrated e-signature feature. For further discussion on parallel data exchange relating to these processes, see Section 4.1.1..

**Figure 20. Share of beneficiaries who exclusively used the system when exchanging information for key processes (survey of beneficiaries)**




*Source: evaluation team, based on the survey of beneficiaries – Q.12 "When implementing your project/operation, to what extent did you use the indicated electronic data exchange system for the following processes:", statement "All documents/reports were submitted only through the system".*

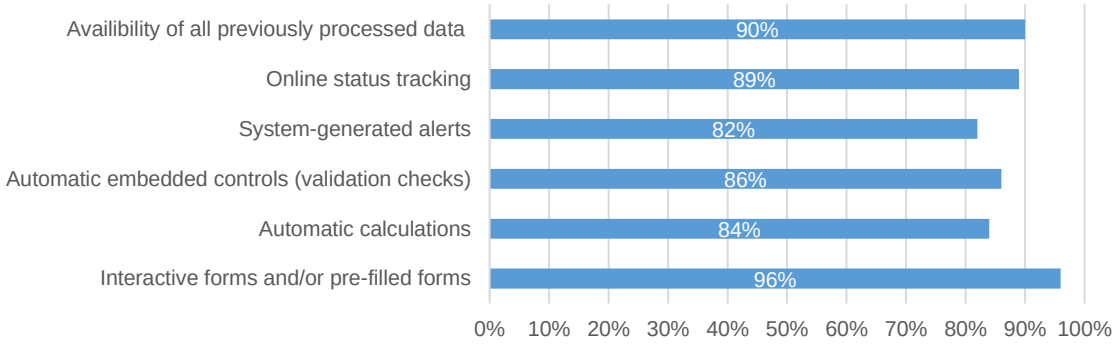
### *Functionalities*

**Overall, almost all of the identified e-Cohesion systems support the key functionalities necessary for e-Cohesion systems.** The findings from the survey data (Figure 36) and mapping data (Figure 21) both indicate that at least four-fifths of the systems provide the necessary functionalities. These include:

- interactive forms and/or forms pre-filled by the system on the basis of data that are stored during previous steps in the procedures;
- automatic calculations, where applicable;
- automatic embedded controls that reduce repeated exchanges of documents or information as far as possible;
- system-generated alerts to inform the beneficiary that certain actions can be performed;

- online status tracking that allows the beneficiary to monitor the current status of the project;
- availability (i.e. it can be retrieved from the system) of all previous data and documents processed by the electronic data exchange system.

**Figure 21. Share of e-Cohesion systems equipped with key functionalities**




*Source: prepared by the evaluation team, based on the mapping.*

The most common functionality among the e-Cohesions systems is interactive forms, which may include any (at least one) of the following features: search or retrieval; dashboard (providing a project overview); tool tips (i.e. when the mouse hovers over something, the user receives additional information about the specific page element, button or field); wizards (stepwise guidance presented to the user of the system, guiding them step by step on how to complete a specific task); online user documentation; a frequently asked questions (FAQ) section; chat functionality enabling beneficiaries to speak directly to administrator/authorities; pre-filled forms (on the basis of data stored at previous points in the project lifecycle, or from external registers/databases); and instant checks for errors.

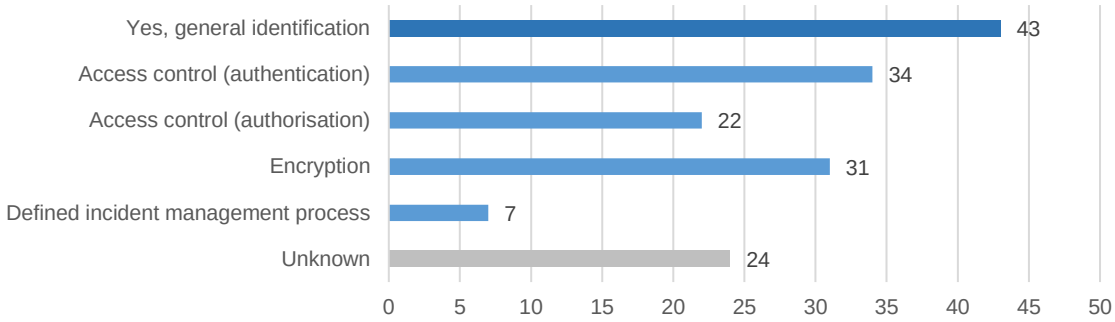
### *Data security*

**How well e-Cohesion systems meet data security requirements is, due to their technical nature, difficult to assess. However, the implementation of e-Cohesion has brought significant improvements in data security.** The data security features of each e-Cohesion system should align national legislation with Directive 95/46/EC[49] to guarantee the security, integrity and confidentiality of data by means of the features of **encryption** (e.g. HTTPS), as well as role-based access control in the form of **authentication** and **authorisation**. The latter refers to different user roles privileges, under which different user rights are allocated to different users according to their needs and rights (e.g. read-only, administrative rights, etc.). The system should also have a **defined incident management process,** in case of technical issues or disruptions.

Given the specialised and technical nature of these requirements, this information is not always available online, and authority representatives are not always knowledgeable in this field (if they chose to engage in our data collection). Thus, we have a relatively large number of systems (24) for which this information is unknown, and 43 systems about which we know that security measures are in place, but for which we were not able to determine exact what security features are used. For the remaining 41 systems, the most frequently used security features are access controls, in the form of authentication and data encryption. Note that these categories are not mutually exclusive – one system may have one, two, three or all four of these features. In the present case, most e-Cohesion systems had a combination of three of the four key features.

[49] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

**Figure 22. Data security requirements (mapping data)**




*Source: prepared by the evaluation team, based on the mapping.*

**The implementation of e-Cohesion has brought significant improvements in data security.** As we can see from Figure 23, over 90% of survey respondents agreed that data integrity and quality, as well as data security and privacy, had improved significantly due to the introduction of e-Cohesion systems. In short, while is unclear whether the legal requirements on data security are fulfilled, there are no indications that data security infringements exist. In addition, the case studies provide some insights into the ways in which data security has been improved due to the introduction of e-Cohesion systems.

**Box 5. Good practices in data security from the in-depth case studies**

**The case studies illustrated several good practices in relation to data security and the benefits acquired in this area through the use of e-Cohesion systems.** These good practices relate to the minimum requirements and beyond:

**Authentication and e-signatures**

- **SL2014** provides three different options for authentication: i) an advanced electronic certificate, which can only be used by Polish citizens; ii) a qualified electronic certificate that applies to the **eIDAS standard**; and iii) a combination of name and password. Depending on the authentication type selected, the necessity for handwritten signatures may be replaced, and legally valid declarations may be made within the system using the communication feature provided to submit a letter.
- **e-Toetus** makes it obligatory to use two-factor authentication to access the system and has made significant strides in aligning digital authentication and e-signature procedures with Regulation (EU) No. 910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation), which is now an additional method for authentication.

**Authorisation**

- **Balcão2020** employs role-based access control (authorisation) using Single Sign-On authentication based on the national fiscal number, which grants each category of users different rights in the system, to ensure data confidentiality.
- **SFINGE2020** employs role-based access control. After authentication, which is carried out exclusively through a certified digital identity (for both front-office and back-office components), users are authorised to access and take actions only in their fields of competence.

**Encryption**

- **All e-Cohesion systems** in the in-depth case study sample make use of HTTPS to secure communication, and database encryption to secure sensitive information such as passwords.

**Data checks**

- **e-Toetus** provides annual checks of data on the basis of risk analysis to ensure that data is verified and reliable.
- **SL2014** executes periodical data quality checks. If a systematic problem is identified, a respective validation check is developed and deployed to prevent similar issues.

**Audit trail**

- **MIS** guarantees non-repudiation by ensuring that documents that are generated by the MIS are automatically signed with a digital signature. User actions are logged, and historical versions are kept available. In terms of an audit trail, these measures result in a chronological record of transactions.

- **eMS** creates an audit trail by logging user actions and digitally archiving old document versions.

*Source: prepared by the evaluation team, based on in-depth interviews with authority representatives.*

### 4.3.2. Simplification and reduction of administrative burden

| | |
|---|---|
| **EQ7** | **Does the use of the e-Cohesion system lead to (perceived) simplification (differentiated by type of user and process)?** |
| **EQ8** | **Does the use of the e-Cohesion system lead to a (perceived) reduction of administrative burden and cost (differentiated by type of user and process) in a longer term?** |

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Effectiveness is deemed high if all of the different types of users/respondents report that e-Cohesion has simplified the way in which they handle information in at least some of their key processes;<br><br>Effectiveness is high if most users of different types report improvements in terms of:<br>▪ reduced repeated transmission of the same information;<br>▪ data and information quality, such as lower error rate, data being more up-to-date, consistency, volume and granularity of data;<br>▪ communication (such as greater speed, accuracy, clarity, and the avoidance of misunderstandings);<br>▪ transparency and accessibility of relevant information. | Surveys of authorities and beneficiaries. | The introduction of e-Cohesion systems has led to simplifications from the perspectives of both beneficiaries and authorities;<br><br>The most significant improvements relate to simplified data management, accessibility, transparency, quality and integrity. |
| e-Cohesion has led to a reduction in administrative burden if:<br>▪ beneficiaries report (and provide valid examples) that e-Cohesion has reduced administrative burden in their key processes in the long term;<br>▪ users from programme authorities report (and provide examples) that e-Cohesion has reduced administrative cost in their key processes in the long term.<br><br>Identification of other key results for beneficiaries and authorities produced by e-Cohesion systems. | Surveys of authorities and beneficiaries. | According to both beneficiaries and authorities, the reduction of administrative burden has been reduced as a result of the introduction of e-Cohesion systems;<br><br>For beneficiaries, the provision of a single point of data exchange, interactive forms (especially pre-filled forms) and automatic calculations and verifications has contributed most to the reduction of administrative burden<br><br>For institutional users, the elimination of paper-based processes, and the e-Cohesion system as a single point of data exchange has contributed most to the reduction of administrative burden. |

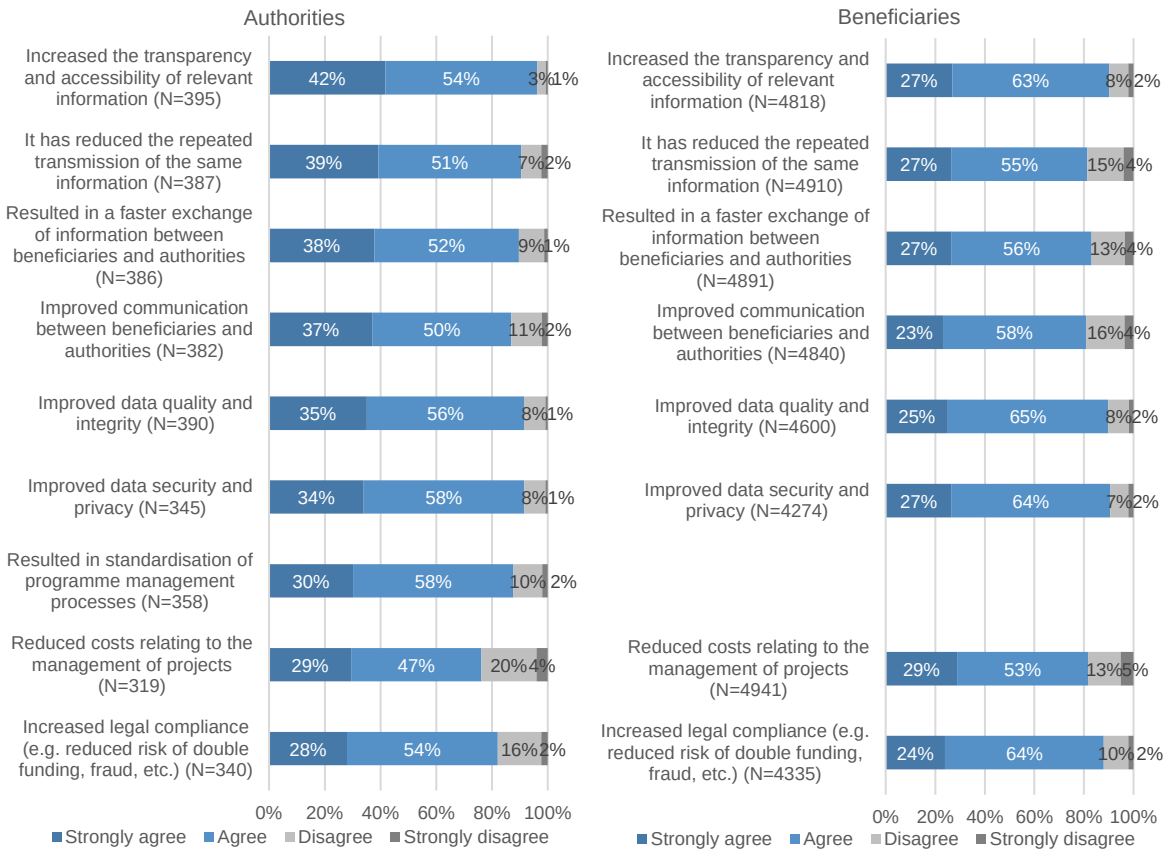
**The overarching goal of e-Cohesion, and the reason why these legal requirements are enforced, is to enhance the simplification of key processes and reduce the administrative burden on beneficiaries.** This goal can be further broken down into several specific objectives, such as the reduction of repeated transmission of the same information; the improvement of data and information quality, transparency and reliability; as well as greater speed and accuracy in communication. The surveys targeted at

authorities and beneficiaries sought to identify whether these objectives are being met, as well as what degree of simplification the e-Cohesion system has brought.

**Overall, users from both beneficiaries and authorities expressed very positive views on the impacts and improvements brought about by e-Cohesion**. In both the authorities' and beneficiaries' surveys, we asked respondents to assess the extent to which the benefits (e.g. reduced administrative burden, simplified procedures) of the introduction of the e-Cohesion system exceeded the associated costs (e.g. financial, time) with regard to the key processes (see Figure 26 on page 96). Most authorities and beneficiaries (around 80%) agreed that administrative burden had been reduced and all key processes had been simplified. The key processes that both beneficiary and authority respondents agreed had benefitted the most were those relating to payment claims, progress reports and applications.

Overall, the areas in which the largest share of authorities and beneficiaries indicated that the electronic exchange of data had led to improvements and simplifications are the **transparency and accessibility of relevant information** and **data quality and integrity**. While the objectives of improving data quality, transparency and accessibility had been met according to both user groups, reductions in administrative costs had been achieved to a slightly lesser extent, especially for authority users. At least 80% of respondents from both beneficiaries and authorities agreed almost all of the statements. We consider this very impactful, clearly showing that e-Cohesion has resulted in simplification and improvement in all of the areas into which we enquired.

**Figure 23. Impacts and improvements due to e-Cohesion (surveys of authorities and beneficiaries)**




*Source: evaluation team, based on the survey of authorities – Q.25 and the survey of beneficiaries – Q.19 "Please assess the following aspects and the impact of exchanging data using the electronic system, compared with paper-based processes or email exchanges. Has using the electronic data exchange system led to improvements in the following areas:"*

**e-Cohesion systems and their provision of a single point of data exchange, interactive forms (especially pre-filled forms), automatic calculations as well as verifications, has reduced the administrative burden on beneficiaries.** In an open-

ended question in the beneficiaries' survey, respondents were asked to provide good-practice examples and features that worked really well for them. Many of those mentioned related to features and functionalities that serve to simplify key processes, reduce administrative burden and improve the overall user-friendliness and effectiveness of systems. We have highlighted the most prominent features and functionalities mentioned by beneficiaries below:

- **Single point of information exchange** – having all data, documents, and information in one place increase transparency and accessibility, makes it easier for beneficiaries to monitor the status of project, and ensure that information is available and can be accessed at any time;
- **Automatic calculations and verifications** – having checks for missing or incorrect data and automatic verification of information before submission, automatic calculation of reported sums (e.g. planned costs, remaining budget to be invoiced, actual financing, etc) has simplified the work of beneficiaries;
- **Pre-filled information** – automatic insertion of information previously submitted by the beneficiary, e.g. from project proposals or financial reports, saves the beneficiary time and significantly reduces administrative burden;
- **Interactive forms** – in general, interactive forms are regarded as useful by many beneficiaries, particularly tool tips, instant checks for errors, dashboards providing overviews, automatic notifications and the monitoring of project status help beneficiaries navigate system and project reporting, saving them time and simplifying key processes in the long term.

**The elimination of paper-based processes, and the establishment of the e-Cohesion system as a single point of data exchange, has reduced the administrative burden on institutional users; having a user-friendly system for beneficiaries, and which is interoperable, allowing data to be checked and verified, has resulted in streamlined and simplified workflow.** Bearing in mind the diversity of this group, we looked at the most common examples of good practices and features that have reduced the administrative burdens on each institutional user group. Respondents from AAs and CAs more frequently refer to good practices relating to user-friendliness and the simplification of key processes stemming from the centralised electronic exchange of data and documents. MA representatives who, as the owners of the systems and the bodies tasked with programme implementation, highlight good practices relating to system development and the importance of interoperability in streamlining data exchanges for both authorities and beneficiaries. Ensuring that the system is user-friendly for beneficiaries saves time for authorities too, as there is less need for them to spend time on technical and/or administrative issues and they can instead focus on their own tasks.

- **User-friendliness –** the aspects most frequently mentioned by institutional users in relation to user-friendliness are automatic calculations and data validation, automatic notifications, and the simplification of forms where only minimum required information needs to be inserted and/or information is pre-filled. Many authority respondents argued that the collection of user feedback, and user involvement in system development, is important in fulfilling simplification potential and reducing the administrative burden of beneficiaries and authorities alike.
- **Elimination of paper-based processes and a single point of data exchange** – on the basis of the authorities' comments, this feature is closely related to **centralisation**, in which the e-Cohesion system constitutes a single point of data and information exchange, thus contributing to the traceability of all decisions and actions taken, as well as access to previously submitted documents and information from all relevant authorities, which simplifies key processes for authorities (e.g. audit and certification activities);

- **Interoperability** – primarily mentioned in terms of the SFC and/or national registers/databases, of which the former provides streamlined workflows, reduced parallel requests and sources of information. The latter allow authorities to verify information, as well as automatic checks on data using information from other systems to ensure that the information submitted by beneficiaries is correct. This saves both beneficiaries and authorities time, and reduces administrative burden.

## 4.4. Efficiency

Overall, efficiency is defined as the extent to which the desired effects are achieved at a reasonable cost, or as the optimal balance between the resources employed and the results achieved. In the context of the evaluation, this criterion primarily considers the **benefits or outcomes of the implementation of e-Cohesion systems** (e.g. reduced administrative burdens and simplified procedures) compared with the **costs incurred in their deployment and operation**. Costs in this context refer both to the resources needed to set up the system, as well as efforts (e.g. financial, time) required from authorities and beneficiaries when using the system. Minimising these efforts where possible, addressing challenges and barriers that potentially inhibit the implementation of e-Cohesion and make use of success factors can limit costs, increase benefits and thus result in a higher degree of efficiency. The evaluation criterion of efficiency is further operationalised into three evaluation questions, two of which are paired together due to their thematic similarity. The evaluation questions are provided below, accompanied by their judgement criteria. These precede each section providing an assessment of the relevant evaluation question. While challenges, barriers and success factors were not originally included under this criterion, they can inhibit or strengthen the efficient functioning of e-Cohesion systems, and their analysis in this context thus provides valuable insights.

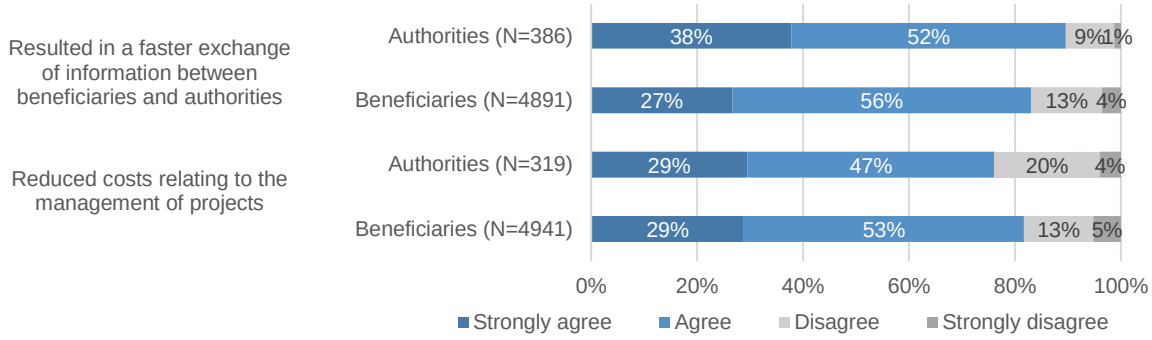
### 4.4.1. Outcomes of the use of e-Cohesion systems compared with previous processes

| EQ9 | **For each user type and process for which e-Cohesion is used: where did e-Cohesion lead to improvements or make things worse?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Efficiency is deemed high if most users of different types report gains in terms of resources or time in most of their relevant processes (such as faster entry, sharing and retrieval of data). | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. | E-Cohesion has resulted in significant gains in resources and time for the majority of users, compared with previous paper-based processes. |

Most authorities and beneficiaries indicated in the surveys that, **compared with paper-based processes or e-mail exchanges, the exchange of data via e-Cohesion systems had reduced costs relating to project management** (e.g. by eliminating parallel paper flows, shipping and document storage costs) **and resulted in the faster exchange of information**. Although nearly all authorities reported time gains when exchanging information, around one-quarter do not feel that this has translated into reduced costs. Authorities who participated in the webinar provided similar responses and most frequently indicated the reduction of costs relating to project management as an area in which e-Cohesion has not brought sufficient added value.

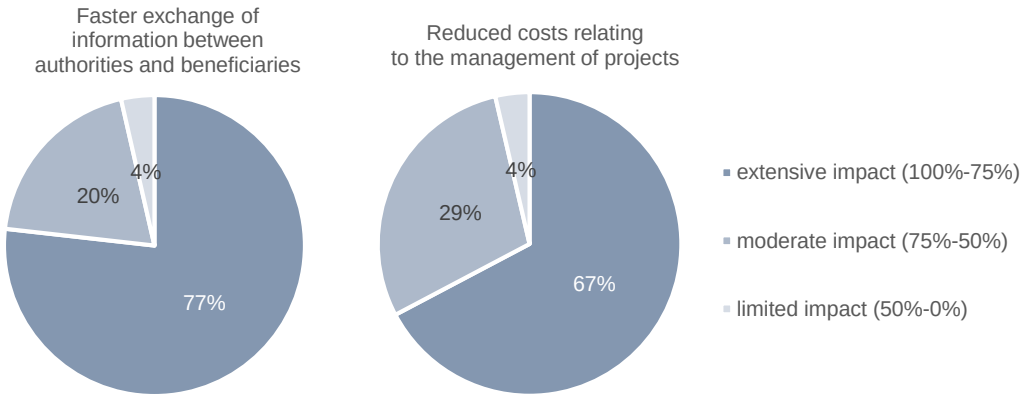
**Figure 24. Time and resource gains as a result of electronic data exchange (surveys of authorities and beneficiaries)**




*Source: evaluation team, based on the survey of authorities – Q.25 and the survey of beneficiaries – Q.19 "Please assess the following aspects and the impact of exchanging data using the electronic system, compared with paper-based processes or email exchanges. Has using the electronic data exchange system led to improvements in the following areas:"*

Similarly, when comparing perceived gains in resources and time across different e-Cohesion systems, **the majority of all systems evaluated display an extensive degree of efficiency**, meaning that more than 75% of beneficiary respondents feel that that the systems have resulted in faster information exchange and reduced costs (see Figure 25 below). Less than 10% of systems have produced limited results in this regard – meaning that for these systems, more than half of respondents indicated that e-Cohesion has not resulted in resource or time gains compared with previous processes.

**Figure 25. Share of systems according to perceived resource and time gains (survey of beneficiaries)**




*Source: evaluation team, based on the survey of authorities – Q.25 and the survey of beneficiaries – Q.19 "Please assess the following aspects and the impact of exchanging data using the electronic system, compared with paper-based processes or email exchanges. Has using the electronic data exchange system led to improvements in the following areas:"*

*Note: This chart covers systems for which at least 10 survey responses were received from beneficiaries (N=55).*

### 4.4.2. Benefits of e-Cohesion systems compared with costs incurred during their use and implementation

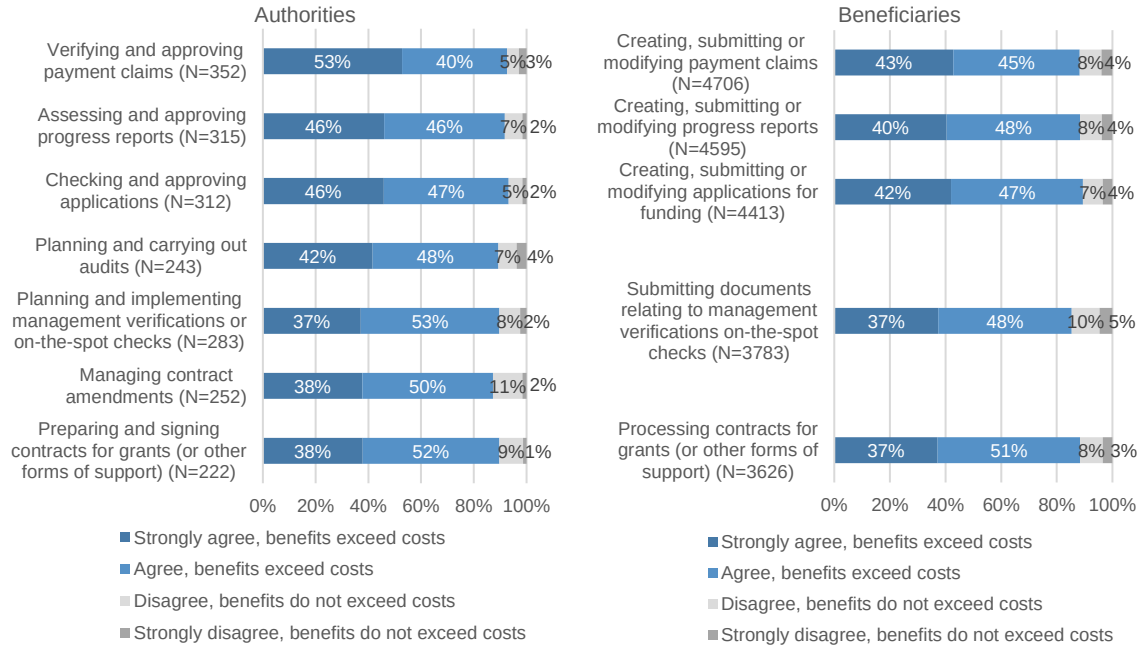
| | |
|---|---|
| **EQ10** | **To what extent are the benefits of e-Cohesion systems higher or lower than its costs (per type of user)?** |
| **EQ11** | **For each user type and process: which actions within the workflow cause the most effort (data capturing, checking, searching, coordinating)?** |

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Efficiency is deemed high if most users of different types think the benefits of the e-Cohesion system significantly outweigh its costs or burden on them, and in comparison to the previous paper-based processes. | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. | Across all processes, the benefits of introducing e-Cohesion systems significantly outweigh the associated costs compared to previous paper-based processes. This indicates a high degree of efficiency when assessing the impact of e-Cohesion systems during project application and implementation. |
| Processes identified by different types of users/respondents as causing the most effort and constituting the biggest administrative cost or (necessary/ unnecessary) burden. | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. | While the evaluation could not clearly identify one key process that causes the most effort for users of e-Cohesion systems, payment claims are considered a core process for both applicants and beneficiaries. Therefore, maximising systems' support for this process could further increase their value and efficiency.<br>The introduction of e-Cohesion systems requires notably more effort from authorities than does their operation/maintenance.<br>Among the barriers affecting the efficient functioning of e-Cohesion systems, limited interoperability represents a key issue. In addition, a lack of harmonisation and simplification can be highlighted as an overarching challenge affecting several areas of e-Cohesion and resulting in burdens for both authorities and beneficiaries.<br>An approach of continuous, evolutionary development represents an overarching success factor relevant to the efficient functioning of e-Cohesion systems that can minimise efforts during their introduction and operation. |

### *Benefits of the use of e-Cohesion systems, compared with their costs*

When comparing the outcomes of e-Cohesion across different users and processes, a significant **majority of both authorities and beneficiaries indicated that they perceive the benefits (reduced administrative burden, simplified procedures) of using an e-Cohesion system to be higher than the costs (in terms of the time and effort required to use it)**. Around 40% of respondents *strongly* agreed with each of the relevant statements, while only around 10% disagreed or strongly disagreed. As illustrated in Figure 26 below, there are no significant differences regarding the impact of e-Cohesion systems across key processes or when comparing the perceptions of different user groups (i.e. between authorities and beneficiaries, and among different types of authorities).

**Figure 26. Perception of the benefits of e-Cohesion systems compared with their costs (surveys of authorities and beneficiaries)**




*Source: evaluation team, based on the survey of authorities - Q.23 and the survey of beneficiaries - Q.15 "Please assess the following statement: the benefits (e.g. reduced administrative burden, simplified procedures) of the introduction of the e-Cohesion system exceed the associated costs (e.g. financial, time) for the following processes:"*

Due to the very limited differences in perception across different processes, we also asked authorities who participated in the webinar to rank processes based on how much effort they think they require from the average applicant or beneficiary. According to the participants, the **exchange of information relating to payment claims** requires most effort. This process was ranked highest by over half of the webinar participants who voted on this question, with all other processes (exchanges relating to applications, progress reports, audits and change requests) being selected significantly less frequently.

This result may initially appear to contrast with the survey results above, which indicate that the process of payment claims is the one for which the introduction of e-Cohesion system has introduced the greatest benefits. A potential explanation may be that **payment claims are a key process of e-Cohesion systems (see section 4.1), meaning that most systems extensively support this process.** It also represents one of the main tasks for beneficiaries compared with, for example, change requests and audits, which make up a far smaller share of beneficiaries' overall operations and are less likely to take place through e-Cohesion systems. The results of the webinar voting suggest that this process requires significant time and resources overall from applicants/beneficiaries, and thus needs to be accordingly addressed by e-Cohesion systems. Similarly, as part of the survey, beneficiaries frequently highlighted tasks relating to payment claims as an area that requires extensive time and effort and which, from their perspective, requires further improvement and simplification. Respondents indicated missing functionalities and technical features (e.g. incorrectly applied automatic calculations, no pre-filling of information, file size and format limits for required attachments etc.) as giving rise to substantial additional time and efforts. **Further improving the way in which this process is carried out via e-Cohesion systems by minimising potential obstacles and utilising systems' capacities to increase convenience could therefore greatly increase the simplification and efficiency of these systems for applicants/beneficiaries.**

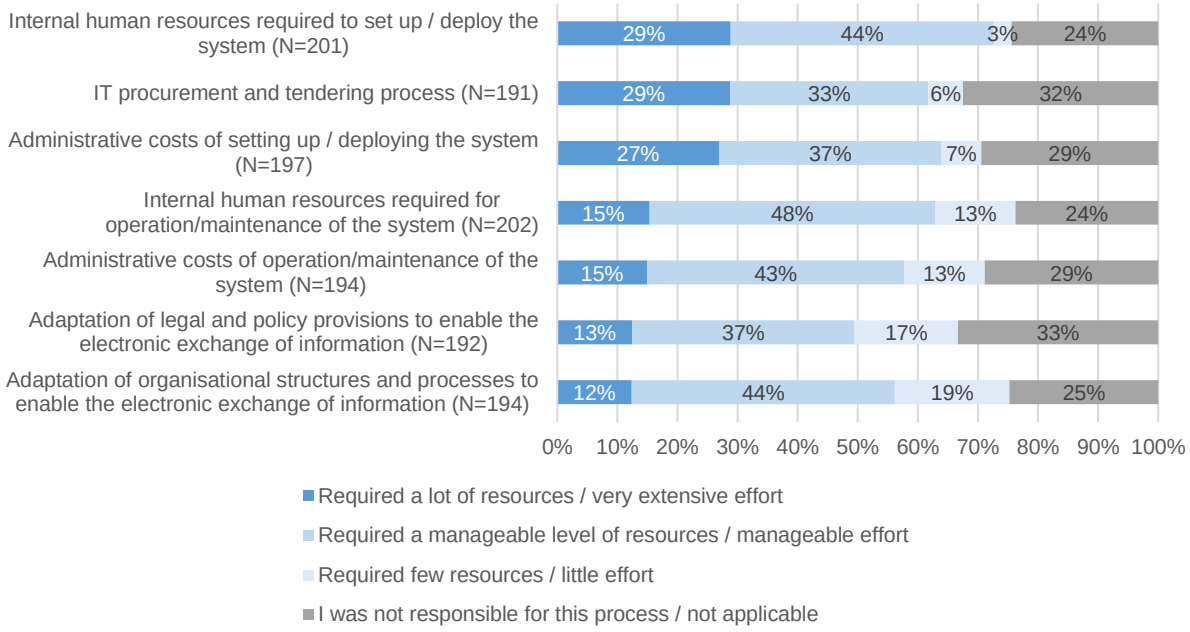
### *Challenges and barriers affecting the efficient functioning of e-Cohesion systems*

In addition to the efforts required from users of e-Cohesion systems, another indication of efficiency is the extent of any burdens and required resources (i.e. costs) relating to the

setting up of e-Cohesion systems, as well as external factors or barriers that may affect their efficient functioning.

Overall, **the deployment of e-Cohesion systems requires notably more efforts from authorities than their operation or maintenance.** Based on the results of the survey, the most challenging aspects in relation to the introduction of e-Cohesion systems – which, according to one-third of authorities, required very extensive efforts – relate to **IT procurement and the tendering process, administrative costs** and the **internal human resources required** (see figure below). Authorities indicated that all other potential burdens were less challenging in comparison. The findings of the Estonian case study on e-Toetus highlight that the efforts required during the introduction of e-Cohesion systems may be indicative of the **digital infrastructure already in place in a country's public service sector**. The widespread implementation of digital services (e.g. digital authentication, use of e-signatures etc.) may limit the efforts required to comply with various legal and data security requirements. In addition, authorities and organisations that are experienced in the implementation and use of digital services may be better prepared to develop and adapt e-Cohesion systems.

**Figure 27. Level of effort required in the introduction and operation of e-Cohesion systems (survey of authorities)**




*Source: evaluation team, based on the survey of authorities - Q.26 "How easy or difficult it was to introduce the e-Cohesion system in terms of:"*

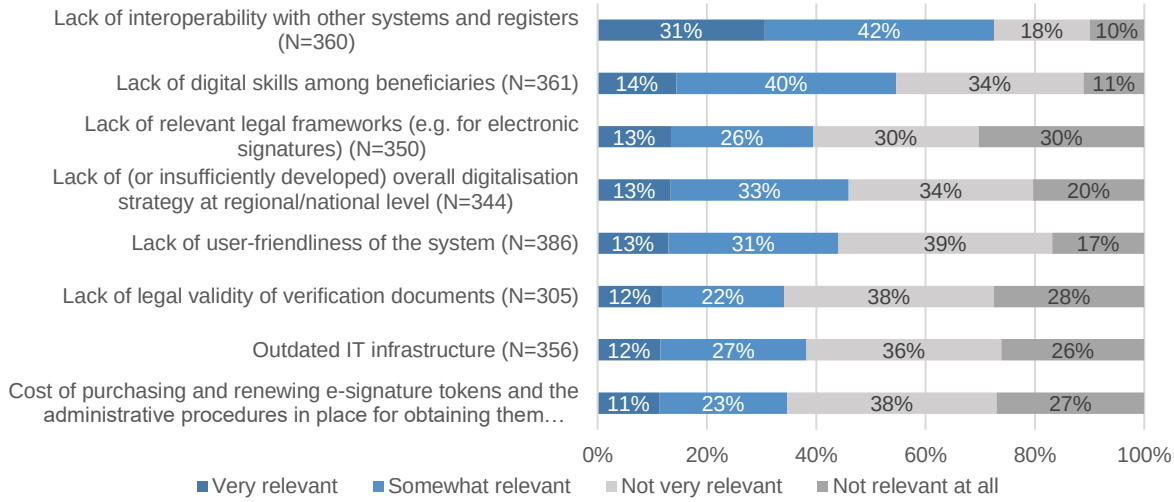
While the above challenges focus on the relevance of operational challenges, the successful implementation of e-Cohesion systems is also determined by how efficiently the systems are able to function, i.e. the extent of the efficiency they provide for their users. This is affected by **several external factors or barriers** (some of which may overlap with the challenges illustrated in the previous figure), the effects of which can be minimised in order to enhance the efficiency of e-Cohesion systems:

- Technological barriers (outdated IT infrastructure, lack of interoperability);
- Organisational issues (lack of strategy, lack of digital skills);
- Legal factors (lack of legal frameworks, e.g. for electronic signature and validity of verification documents).

Out of the above barriers, the problem that is most likely to impede the efficient functioning of systems is a **lack of interoperability with external applications and databases**. This was the issue indicated by authorities as being by far most relevant, compared with all other

barriers. As previously discussed in Section 4.1, while most e-Cohesion systems meet the minimum requirements for interoperability, the full implementation of e-Cohesion (i.e. integration with national or EU systems) is only achieved by a minority of systems. This finding is also supported by the answers provided by respondents to several open-ended questions, showing that even unprompted, interoperability is mentioned by authorities as one of the most important challenges.

**Figure 28. Relevance of external barriers to the efficient functioning of e-Cohesion systems (survey of authorities)**




*Source: evaluation team based on the survey of authorities - Q.27 "Are the following problems relevant or not in your country/region for the efficient functioning of the e-Cohesion system?"*

An overarching challenge in the development and operation of e-Cohesion systems, which was highlighted both by the authorities who participated in the e-Cohesion webinar and the interviewees consulted during the case studies, is the implementation of harmonisation and simplification. **While not necessarily related to e-Cohesion specifically, a lack of harmonisation and simplification can inhibit the efficient introduction and functioning of e-Cohesion systems and result in increased burdens for their users.** E-Cohesion systems have to address various requirements, which can greatly increase their complexity and result in additional efforts from their users. These include:

- Business requirements and legal frameworks;
- National requirements (including the country-specific adaption of relevant European legislation);
- Programme-specific requirements (e.g. supporting different OPs with a wide range of projects and beneficiaries);
- Specific demands made to beneficiaries by authorities, which may go beyond the ESIF regulations.

Addressing these complex requirements while also responding to users' needs and simplifying procedures represents a key challenge in the development and operation of e-Cohesion systems. For a further review of challenges and potential solutions, see Section 5.

**Box 6. Examples of issues relating to harmonisation and simplification that were highlighted during the case studies**

**eMS – Interreg**

**Programme-specific requirements:** because the eMS seeks to support a wider range of programmes, a wider range of requirements must be taken into account. The implementation of programme-specific requirements causes complexity, while a failure to consider these often causes malfunctioning workflows at programme level. This situation is different from those of systems that merely support one programme, or

which are implemented in the same organisational context. This results in compromises that may not meet the needs of all users.

**e-Toetus – Estonia**

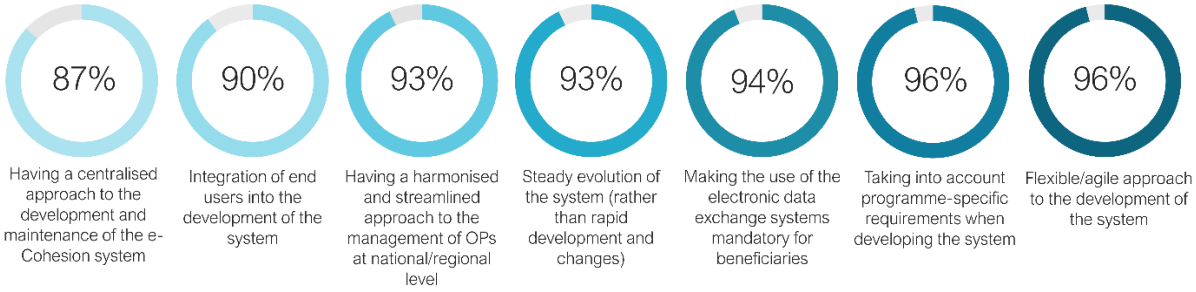
**Complex national requirements and additional demands by authorities:** some users reported that the system is complex in terms of the comprehensibility of the eligibility rules. These primarily relate to national legislation, which provides specific, sometimes multiple, requirements for certain measures or open calls decreed by a ministry or government. This has less to do with the system, and more to do with the national adaptation of European legislation, which can result in unnecessary requirements and administrative burdens being placed on beneficiaries and institutional users alike.

*Source: prepared by the evaluation team, based on in-depth interviews with authority representatives.*

### *Success factors for the efficient functioning of e-Cohesion systems*

The evaluation also sought to identify **success factors, i.e. practices that are key to the efficient functioning of e-Cohesion systems, and which minimise the efforts required for their introduction and operation**. The responses provided in the survey of authorities did not identify a particular key factor or practice, as nearly all respondents considered all of the factors assessed to be relevant to the efficient functioning of their e-Cohesion system (see Figure 29 below).

**Figure 29. Share of authorities who considered particular success factors to be relevant to the efficient functioning of their e-Cohesion systems**




*Source: evaluation team, based on the survey of authorities Q.28 – "In your opinion, what are the key success factors for the efficient functioning of the e-Cohesion system?".*

Due to the survey results indicating that the deployment of e-Cohesion required extensive efforts, we gave those authorities who participated in the webinar the option to share one key success factor for the **introduction and development of a well-functioning e-Cohesion system**. Their responses focused on four key areas:

- Simplification – avoiding unnecessary add-ons;
- Preparation – initiating the system introduction early;
- Coordination – coordinating work between authority stakeholders and at national level;
- Development – a slow and steady approach, taking user experience into account.

While all of the areas above are highly relevant to the introduction and development of e-Cohesion systems, the results of the case studies indicate that **a continuous, evolutionary development approach** represents one overarching success factor. Despite differing national contexts with regard to ESIF management, as well as the uneven development of digital infrastructure, the e-Cohesion systems evaluated took similar approaches in their development, showcasing a **high degree of user-integration, prototyping, continuous improvements, and frequent releases of new versions.** The development and deployment of a stable core e-Cohesion system that meets key requirements and then continues to build on users' experiences to focus on the improvement and streamlining of processes, can thus reduce administrative burdens overall and increase efficiency. For this purpose, **collecting feedback on the system and its functionality is essential** (see Section 4.1).

## 4.5. EU added value

When answering the evaluation questions on EU added value, **we explore whether the e-Cohesion initiative, as outlined in the CPR and the Implementing Regulation, has contributed to the development or improvement of national/regional electronic data exchange systems**.

First, we can look at EU added value in terms of **volume effects**, i.e. how and in what ways the e-Cohesion initiative has added to existing digitalisation and digitisation policy actions, and thus contributed to greater and more extensive exchange of data than before. Second, we can assess EU added value from the perspective of **scope effects**, i.e. how and in what ways the e-Cohesion initiative has broadened existing actions and addressed groups and policy areas that would otherwise not been addressed. Third, we can look at **role effects** – that is, whether the e-Cohesion initiative has influenced and supported innovation and the transfer of ideas across policy contexts (in other words, assessing spill-over effects). Finally, we consider **process effects**, i.e. how authorities and beneficiaries continue to derive benefits from the e-Cohesion initiative and its associated requirements.

EU added value has been operationalised into two evaluation questions, each of which is discussed in the sections below.

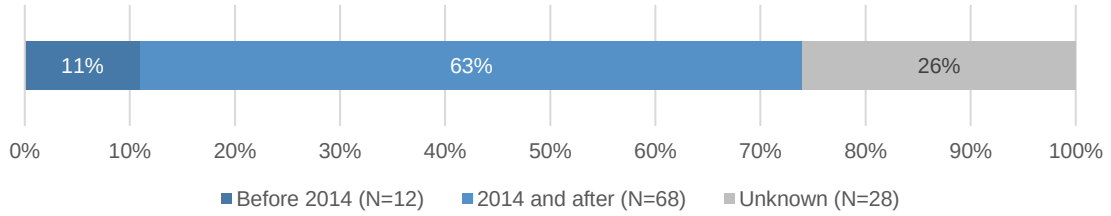
### 4.5.1. e-Cohesion initiative and the development of electronic data exchange systems

| EQ12 | To what extent has the e-Cohesion initiative (as defined in the CPR) contributed to the development of electronic data exchanges systems in the Member States? |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| Identify whether the electronic data exchange systems already existed between authorities and beneficiaries, or were being developed prior to e-Cohesion initiative;<br><br>Opinion of the authorities as to whether the e-Cohesion initiative provided the decisive impetus for the development/ improvement of electronic data exchange systems;<br><br>Opinion of the authorities as to whether the audits of functioning of the management and control systems carried out by the Commission provided valuable recommendations for improving e-Cohesion systems. | Survey of authorities;<br><br>In-depth desk research and interviews under in-depth case studies;<br><br>Mapping of e-Cohesion systems. | The key aspects of EU added value include: the introduction of some e-Cohesion systems in Member States where similar systems did not previously exist, as well as contributing to the continuous improvement of existing systems. The latter is, according to our findings, the most common outcome of e-Cohesion. |

**The e-Cohesion initiative positively contributed to the development of electronic data exchange systems in the EU Member States.** According to our mapping data (see Figure 30), only 12 systems out of the 80 e-Cohesion systems for which we could identify the year of introduction were in operation before 2014. Most systems were created after the introduction by the CPR of the e-Cohesion initiative in December 2013. Indeed, most systems (69 out of all 108 systems identified) **started operating from 2013 or later**. Nine systems started life between 2006 and 2013. Two systems (the Italian MIR and Cypriot IAS) were put into operation as early as 2000.

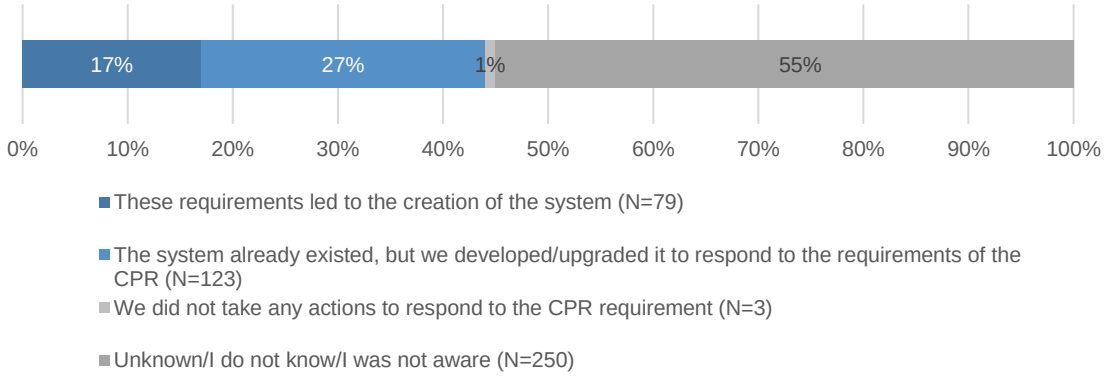
**Figure 30. Percentage of e-Cohesion systems put into operation before and after 2014**




*Source: prepared by the evaluation team, based on the mapping.*

**These results indicate that the e-Cohesion requirements laid down in 2013, with an end date of December 2015, might have brought volume effects with regard to the state of electronic exchange**. However, we cannot definitively confirm whether these systems really were introduced as a result of the e-Cohesion initiative, or if they would have happened anyway. This argument is also strengthened by the survey results (see Figure 31), which indicate that for most of those e-Cohesion systems already in operation, the CPR still contributed to their further development. **Of the authorities surveyed, 44% said that the e-Cohesion initiative influenced the decision to create or upgrade** an e-Cohesion system. The responses to an open-ended follow-up question show that the CPR further incentivised organisational changes and the standardisation of monitoring systems. Only a small fraction of respondents from authorities claimed that no actions were taken in response to the CPR requirements. The large share of respondents who did not know what actions were taken indicates the specificity of the question and its relevance only to a small share of respondents.

**Figure 31. How authorities responded to the CPR to enable the use of an e-Cohesion system**




*Source: evaluation team, based on the survey of authorities - Q.10 "How did you respond to this CPR requirement to enable the use of an e-Cohesion system?"*

The finding that the e-Cohesion requirements led either to the creation of the system or to the upgrading of an existing system is further bolstered by the in-depth case studies. Of the six e-Cohesion systems in the case studies, three (Balcão2020, SL2014, eMS) were implemented as a direct result of the e-Cohesion requirements, whereas the remaining three (e-Toetus, SFINGE2020, MIS) were already in use (see Box 7). For the latter group, the e-Cohesion initiative helped to strengthen digitalisation policy efforts and provided a strong legal basis to implement a fully-fledged e-Cohesion system. The technical assistance funds also provided a solid economic basis for their continuous development and improvement.

**Box 7. Development of e-Cohesion in the context of CPR requirements (case studies)**

**The good-practice systems in the case studies represent a mosaic sample of volume effects;** three of the e-Cohesion systems studied were developed as a direct outcome of the e-Cohesion requirements, whereas the remaining three benefitted from the economic and legal impetus to further develop their existing systems of electronic data exchange.

E-cohesion systems **initially** developed as a response to the e-Cohesion requirements:

- **Balcão2020** – launched in 2015 to address the requirements of EU Regulation 1303/2013, which played a critical role in the development of e-Cohesion in Portugal. Balcão2020 was co-financed by EU funds.
- **SL2014 –** development of this Polish e-Cohesion system began in 2012, during a period in which e-Cohesion-related requirements were already the subject of intense discussions between Member States and the European Commission. The deadline of 31 December 2015 was taken seriously, and this commitment was paired with a national development agenda in which more digitalised processes in public administration and e-government were noticeable.
- **eMS** – this Interreg e-Cohesion system represents a direct outcome of the e-Cohesion initiative, as there was a clear need for an e-Cohesion system that could manage Interreg programmes. Because of this, Interact was mandated by the European Commission to develop the eMS.

E-cohesion systems that were **further** developed as a response to the e-Cohesion requirements:

- **e-Toetus –** tentative development of this e-Cohesion system began in 2007, but its current and final version was launched in 2015. While the system was already underway as a result of demands from authority representatives, the e-Cohesion initiative and associated requirements lent political, legal and economic impetus to its further development.
- **SFINGE2020** – initially launched during the 2007-2013 programming period as part of a wider national and regional digitalisation agenda under the name SFINGE. With the 2014-2020 programming period and the requirements of the CPR, the e-Cohesion system was further updated to better fulfil the principles of interoperability and once-only encoding. In this context, the new system, renamed SFINGE2020, was released.
- **MIS –** A first portal solution providing basic functionality for the exchange of information had already been introduced in 2002. In 2007, the first version of the MIS was developed. Interviews with representatives from the MIS Special Agency confirmed that the e-Cohesion initiative helped to convince decision-makers on all sides to strengthen digitalisation and e-government, and established a strong legal basis for doing so. Thus, the e-Cohesion requirements provided a significant point of reference for the national legal framework in the context of information exchange between beneficiaries and programme authorities in Greece.

*Source: prepared by the evaluation team, based on in-depth interviews with authority representatives.*

### 4.5.2. The e-Cohesion initiative and the dissemination of good practices and policy learning

| EQ13 | **To what extent has the introduction of e-Cohesion systems contributed to the dissemination of good practice and policy learning to other policy areas in the Member States?** |
|---|---|

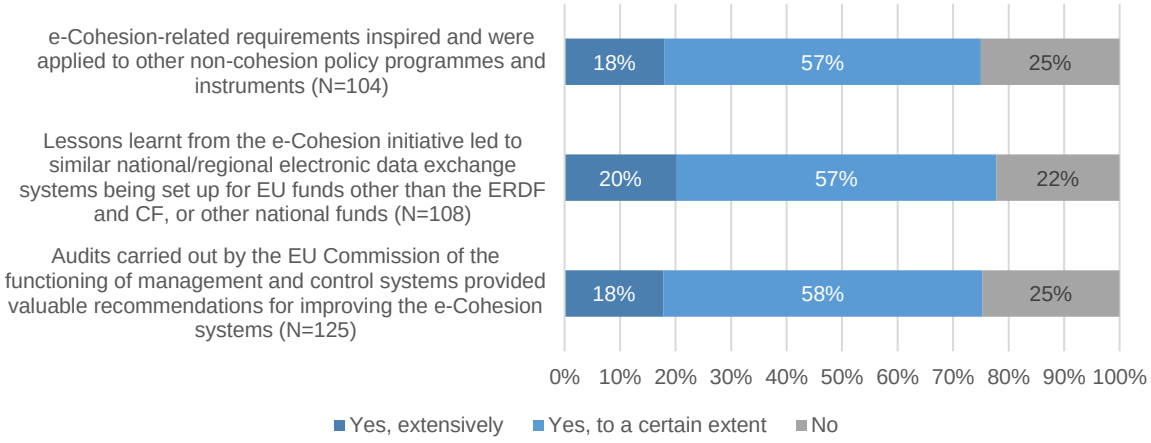
| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| The extent is deemed large (high added value) if there is compelling evidence that e-Cohesion led to:<br>▪ similar national systems being set up for other policies due to learning from the e-Cohesion promoted by the Commission;<br>▪ common business processes and standards created and implemented in managing similar public policy interventions. | Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. | Additional dimensions on EU-added value range from the increased use and coverage of e-Cohesion systems, positive spill-over effects into other policy contexts with the development of electronic data exchange systems to accommodate national/regional as well as other EU-level funds and schemes. |

**The case studies also show clear scope effects for EU-added value, with the e-Cohesion initiative helping to broadening existing actions and address groups and policy areas that are beyond the scope of e-Cohesion**. For example, the e-Cohesion

systems MIS and e-Toetus integrated funds and beneficiaries beyond the ESIF. In Estonia, e-Toetus is used, in addition to the ERDF, ESF, and CF, for the management of several other EU instruments and schemes. It is also used for many national funds and grants, of which the MA is actively seeking to incorporate as many as possible to provide a single point of data exchange for Estonian beneficiaries of all European/national funds. The context of the eMS is slightly different. This went from a community system covering four programmes to one that covers 37, due to its ability to deliver its users cost savings as well as both standardisation and the ability to customise. Thus, e-Cohesion systems and their functionalities have served to broaden existing actions, but also offer advantages for groups and actions that were not targeted by e-Cohesion, but which have nonetheless benefitted from its policy efforts.

**Most authority representatives assess the 'spill-over' effects of the e-Cohesion initiative positively.** Those authority representatives who responded that they knew about the CPR requirements (Figure 31) were also asked to assess the EU added value of the e-Cohesion initiative in relation to various outcomes. In line with the scope effects found among some of the case studies, the majority of authority respondents agreed that e-Cohesion-related requirements had inspired and were applied to other non-Cohesion policy programmes and instruments, and that the lessons learned from the e-Cohesion initiative had led to other, similar national/regional electronic data exchange systems being set up for other funds (here, we removed the 'do not know/cannot answer' responses). **These results indicate role effects, i.e. that e-Cohesion supported innovation and the transfer of ideas between policy contexts.** However, it should be mentioned that up to a quarter of authority respondents disagreed with these statements (see Figure 32).

**Figure 32. Assessment of the dimensions of EU added value brought by the e-Cohesion initiative (survey of authorities)**




*Source: evaluation team, based on the survey of authorities - Q.11 "Please assess whether or not the e-Cohesion initiative contributed to the following results in your country/region:"*

**It is clear from the results of the other evaluation criteria that the process effects of e-Cohesion are significant**. Compared with paper-based processes, the use of e-Cohesion systems has simplified key processes and reduced administrative burdens on authorities and beneficiaries alike. For further detail, see sections on Effectiveness (4.3) and Efficiency (4.4).

## 4.6. User-friendliness

In the context of the evaluation, user-friendliness refers to the extent to which e-Cohesion systems are perceived as sufficiently intuitive, easy to use, self-descriptive, interactive, appealing, time-saving, and otherwise **maximise value for their users when handling the exchange and management of data, documents and information**. Whether the systems fulfil these criteria is also determined by the extent to which they implement the **key**

**functionalities** outlined in the Implementing Regulation that simplify users' day-to-day processes, as these functionalities are directed towards user-friendliness. The evaluation criterion of user-friendliness is further operationalised into three evaluation questions. Each evaluation question is accompanied by several judgement criteria, which outline how the question is assessed. The evaluation questions are provided below, each of them preceding a section that provides an assessment of the respective evaluation question.

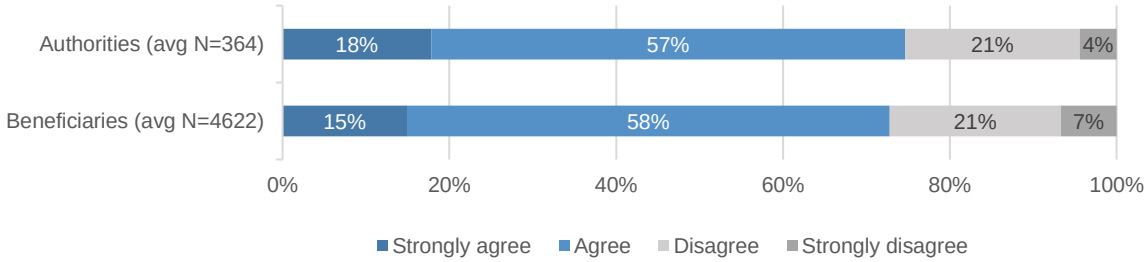
### 4.6.1. Clarity, ease of use and self-descriptiveness of e-Cohesion systems

| EQ14 | **Is the e-Cohesion system self-descriptive (clear structure, feedback via tool tips, etc.) and intuitively useable?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| User-friendliness is deemed high if most users/respondents of different types:<br>▪ characterise the system as self-descriptive and clear;<br>▪ agree that using it does not require (extensive) training;<br>▪ agree that the system helps users to understand what operating steps to follow;<br>▪ find the user interface appealing and easy to use;<br>▪ are happy with the clarity and level of complexity of the system. | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies of good practice systems. | Overall, e-Cohesion systems exhibit a high degree of clarity, ease of use and self-descriptiveness. However, there remains notable variation between different systems;<br>While not all systems meet all of their users' needs consistently, users overwhelmingly agree that with time and more experience, e-Cohesion systems help them to carry out tasks more efficiently. |

**Based on the results of the surveys, most users consider e-Cohesion systems to be user-friendly according to the criteria above** (see Figure 33 below). In comparison, less than one-third of respondents did not agree that their e-Cohesion system fulfils these criteria. Overall, **experience with a system does not seem to affect perceived user-friendliness**. The results of the surveys show that some systems which are, on average, used very infrequently by beneficiaries, are perceived very favourably in terms of user-friendliness.

**Figure 33. Share of respondents agreeing with statements on the user-friendliness of systems**

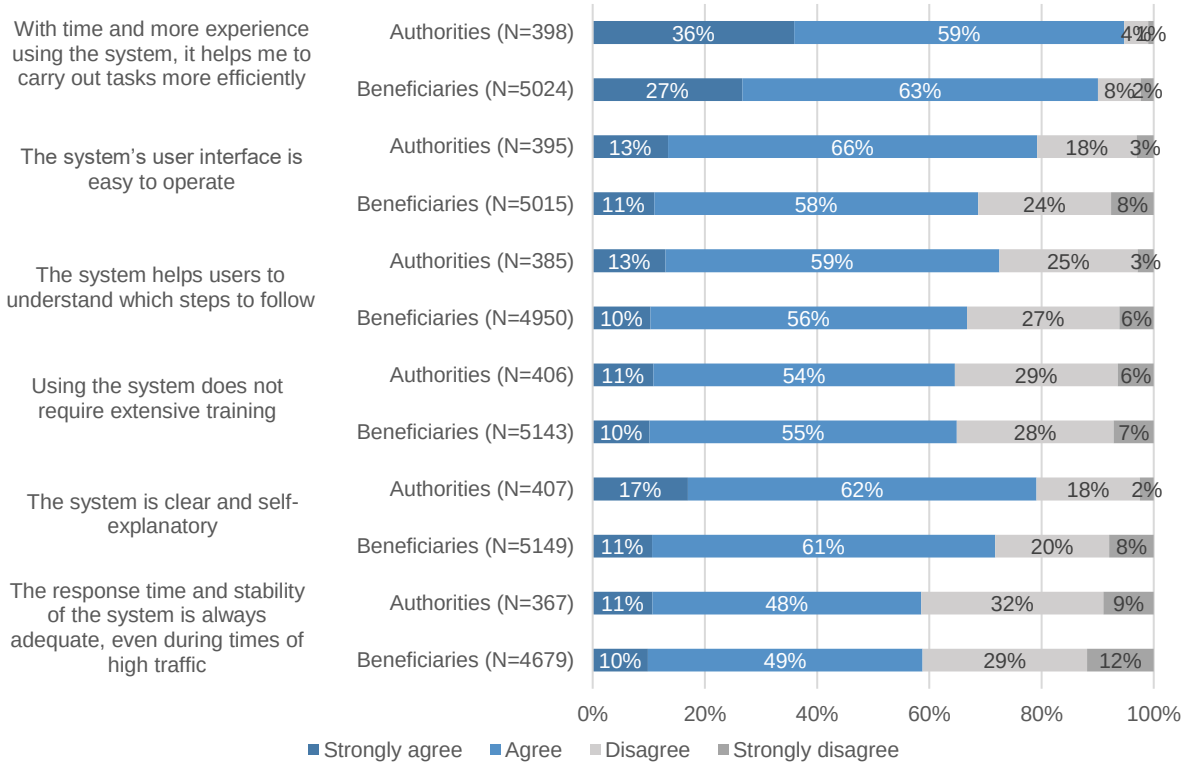



*Source: evaluation team, based on the survey of authorities - Q.24 and the survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the e-Cohesion system?"*

When looking at specific statements relevant to the aforementioned criteria of clarity, ease of use and self-descriptiveness, the results show that most respondents feel that their

respective system fulfils these individual criteria (see Figure 34 below). More specifically, more than half of authorities and beneficiaries indicated that their e-Cohesion systems are clear and self-explanatory, that the interface is easy to operate, that it helps them to understand what steps to follow, and that its use does not require extensive training. However around one-third of respondents disagreed or strongly disagreed with these statements. Together with the low share of respondents who strongly agreed with them, **these results indicate that e-Cohesion systems do not meet all users' needs when it comes to their clarity, ease of use and self-descriptiveness.** Overall, users are also comparatively unsatisfied with the responsiveness and stability of systems – an aspect of operation which, based on the results of the case studies, is critical to user-satisfaction. However, despite these caveats, authorities and beneficiaries **overwhelmingly agree that with time and more experience in using them, such systems help them to carry out tasks more efficiently**. Overall, beneficiaries tend to perceive systems as slightly less user-friendly than institutional users (authorities), who work with the systems more often and may be more experienced with their operation and respective features.

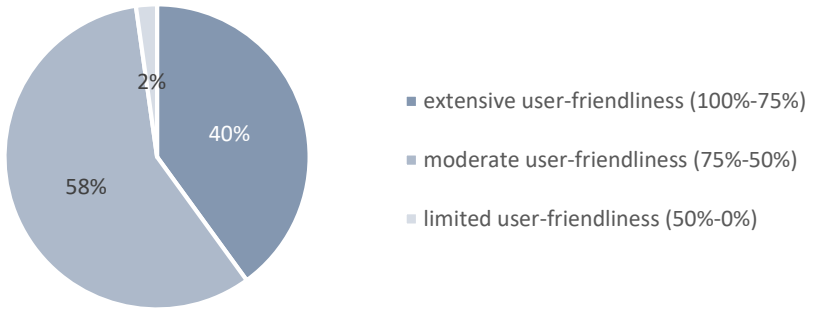
**Figure 34. Perceived user-friendliness of e-Cohesion systems by type of respondent**




*Source: evaluation team, based on the survey of authorities - Q.24 and survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the e-Cohesion system?"*

When looking at the extent of user-friendliness among different e-Cohesion systems, the results complement those illustrated in the figures above. As illustrated in Figure 35 below, **more than one-third of the e-Cohesion systems assessed show an extensive degree of user-friendliness,** meaning that at least 75% of respondents using them overall agreed or strongly agreed with the above statements. While almost all of the systems concerned meet most of their users' needs, the large share of systems that provided moderate user-friendliness according to their beneficiaries (meaning that at least 25% of respondents did not consider them user-friendly) indicates that **notable variation remains among different e-Cohesion systems** with regard to their user-friendliness.

**Figure 35. Share of systems according to their user-friendliness (survey of beneficiaries)**




*Source: evaluation team, based on the survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the indicated electronic data exchange system you used:"*

*Note: This chart covers systems for which at least 10 survey responses were received from beneficiaries (N=45).*

### 4.6.2. Implementation of key functionalities closely associated with user-friendliness

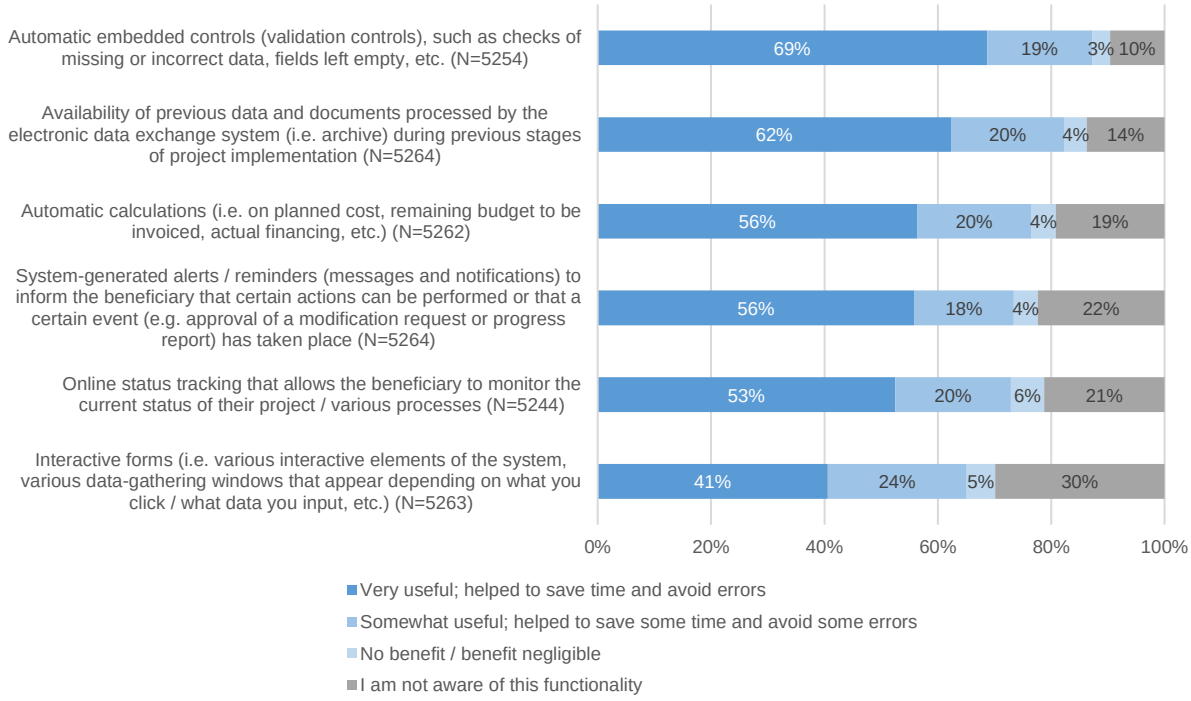
| EQ15 | **Does the e-Cohesion system have the main functionalities, as per e-Cohesion requirements, that facilitate user-friendliness?** |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| User-friendliness is deemed high if:<br>▪ e-Cohesion systems support key functionalities closely related to user-friendliness;<br>▪ most users/respondents of different types consider key functionalities to be useful (they simplify their key processes and the way in which they handle the exchange of information). | Mapping of e-Cohesion systems;<br>Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies of good practice systems. | Nearly all e-Cohesion systems support all key functionalities closely associated with user-friendliness, and users are highly satisfied with them overall;<br>The provision of e-signatures can greatly reduce administrative burden by enabling fully paper-free processes;<br>The incomplete implementation of functionalities and absence of various technical features can result in significant burdens for users and diminish the user-friendliness of e-Cohesion systems. |

E-Cohesion requirements identify several **key functionalities closely associated with user-friendliness** that can greatly increase the value of a system to its users and simplify their key processes. In addition, the requirements make note of several types of **interactive forms** (i.e. interactive system elements, data collection windows) whose implementation can contribute to the clarity and self-descriptiveness of systems and save time and administrative burden for users.

As further outlined in Section 4.3 on Effectiveness, the findings of the evaluation show that **nearly all of the identified 108 systems support all key functionalities associated with user-friendliness**, including various types of interactive forms. Overall, **systems that implement a higher number of key functionalities are more likely to have a high level of user satisfaction,** being perceived as user-friendly and resulting in substantial simplification and benefits according to beneficiaries. When available, **functionalities are perceived as useful by nearly all beneficiaries** (only 3-6% of beneficiaries consider the benefits of each functionality negligible, see Figure 36). No significant differences in satisfaction exist between different types of functionalities, indicating that their presence is overall viewed very positively and that they improve the way users handle the exchange of documents and data.

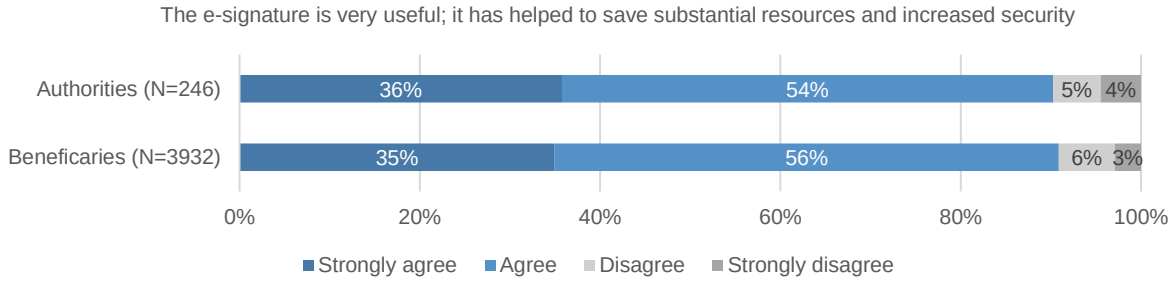
**Figure 36. Usefulness of key functionalities of e-Cohesion systems (survey of beneficiaries)**




*Source: evaluation team, based on the survey of beneficiaries - Q.16 "How useful (or not) are the following functionalities of the electronic data exchange system you used and indicated above?"*

In addition to key functionalities, **a technical feature closely associated with usefulness and user-friendliness is the provision of an e-signature facility**, which can greatly reduce administrative burdens by enabling fully paper-free processes and reducing the effort required for transport and storage (see Section 4.1 on Relevance). Based on the results of the survey, nearly all authorities and beneficiaries who were aware of this feature considered it to be useful.

**Figure 37. Usefulness of e-signature, by type of respondent (surveys of authorities and beneficiaries)**




*Source: evaluation team, based on the survey of authorities - Q.24 and the survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the indicated electronic data exchange system you used:"*

While all of the key functionalities outlined in the requirements for e-Cohesion are perceived as highly useful, **automatic calculations and validation controls** (i.e. automatic calculations of reported sums, checks on missing or incorrect data), **interactive forms** and **pre-filled forms** (as a type of interactive form) were among the features most frequently noted by beneficiaries in response to open-ended survey questions as **resulting in considerable simplification of their work or otherwise being highly valuable.** Similarly, the absence or limited implementation of such functions was frequently mentioned as a notable weakness of a particular system. This further highlights the close association between such functions and a system's overall user-friendliness, and indicates the need for their full implementation. While most key functions are supported by almost all of the systems, the limited share of systems that extensively support the pre-filling of information

(see Section 4.3 on Effectiveness), indicates that is still room for further development in this area.

Responses by both authorities and beneficiaries also highlight that **the incomplete implementation of functionalities or the absence of specific technical features can result in significant additional burdens for users of e-Cohesion systems, and diminish their user-friendliness**. Examples of such features are included in the box below.[50] Also consult "potential solution no. 3.2" in section 5.

**Box 8. Functionalities that could maximise the benefits for e-Cohesion users**

| Functionality | Further explanation and benefits |
|---|---|
| Adjustable user rights | Adjustable user rights, i.e. the ability to allow partners of main beneficiary or team members to modify submitted information on their own. Or / and to provide specific user groups at least read-only access to relevant information. |
| Support for a wide range of formats and types of files, and higher limits on file size | Lack of such features can greatly increase parallel exchanges outside the system and reduce its user-friendliness. More often than one might expect the upload of supporting documents causes problems because of unnecessary restrictions regarding the size and the type of files. |
| The ability to easily print information or exchange files created and stored in the system | For many use cases powerful means for information presentation and exchange are vital. This regards overviews but also detailed information on specific projects and transactions. |
| An autosave feature | It would allow to avoid timeouts for user sessions, which log users out of the system automatically after a certain period of inactivity. It needs to be clarified, that all changes are saved and users have to undo changes that they do not want to be saved. |
| The ability to modify previously submitted information | The ability to address change requests and modify previously submitted information, e.g. account numbers, project partners and submitted documents in a traceable way allows to avoid the double-work of repeating the submission of the same information and increases transparency. |
| Tool tips and client-side validation checks | To ensure high degree of user-experience, features like tool tips and client-side validation checks that offer users immediate feedback regarding missing and wrong values should be provided. |
| Calculation of lump sums and flat rates and exchange rates | Introduce calculation of lump sums and flat rates as part of automatic calculations. Also, good practice of automatic calculations refers to the automatic calculation of exchange rates in programmes that must handle different currencies. To further decrease administrative burden, also provide support for staff cost calculations and procurements management. |
| Provide beneficiaries reporting and analysis features and access to project-crossing analytical information | For the implementation of the online status tracking, the system should provide dashboard functionalities providing users an overview of project status as well as the status of related information objects (e. g. modification request, payment claim, progress report). The overview should also provide information on quantitative data (e. g. planned and realised values of eligible costs), important events, actions to be taken and deadlines. Good practice is to provide beneficiaries with access to standard reports and analysis features (business intelligence). |
| Users access to all previously submitted documents | To fully exploit the availability of previous documents processed by the system, the system should provide users access to all previously submitted documents. Provide integrated access to all exchanged documents and flexible retrieval functionalities, allowing full-text search. Provide user-friendly features to analyse changes between different versions of submitted documents (e. g. modification request and application). |
| Dedicated chat function | Set up a dedicated chat function for communicating to all categories of users, including authorities, when needed. This should be a valuable replacement for email, calls, and personal visits. The communication functionalities should streamline communication with authorities as well as requests and implementation of corrections. |

*Source: prepared by the evaluation team.*

[50] This box corresponds to sub-deliverable "d) Information sheet on the identified functionalities which could be implemented in e-cohesion systems in order to maximise the benefits for its users during the 2021-2027 programming period" under Task 7.

### 4.6.3. Provision of help functionalities and help desk services

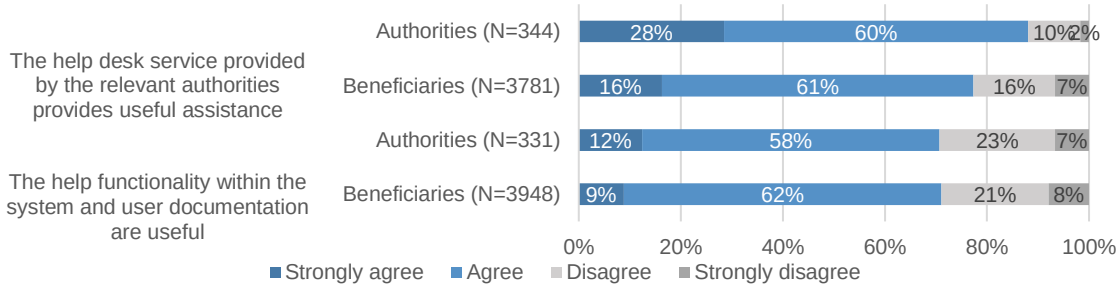
| EQ16 | Does the e-Cohesion system provide help functionality and a help desk service? |
|---|---|

| JUDGEMENT CRITERIA | DATA SOURCES AND METHODS | KEY FINDINGS |
|---|---|---|
| User-friendliness is deemed high if:<br>▪ most users/respondents of different types are happy with the system's help functionality and user documentation (software features);<br>▪ most users/respondents of different types agree that the help desk service (organisational function) provides helpful assistance. | Mapping of e-Cohesion systems;<br>Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. | Satisfaction with the support features of e-Cohesion systems is widespread despite some caveats – overall, help functionalities and help desk services are well implemented and largely meet the needs of both beneficiaries and institutional users;<br>Both types of features can serve needs beyond support, such as improving communication between authorities and beneficiaries and contributing to system development. |

Sophisticated e-Cohesion systems provide support features to their users in the form of various **help functionalities** (software features, including interactive forms such as tool tips, online user documentation, stepwise guidance, FAQ, chat) and **help desk services** (organisational support). While the availability of support features and their development (particularly interactive forms) varies significantly between e-Cohesion systems, **the results of the evaluation indicate that overall, they are well implemented and largely meet the needs of both beneficiaries and institutional users.**

Based on the results of the surveys, **most users perceive help functionalities and help desk services as valuable and are happy with the support they provide.** Overall, both authorities and beneficiaries view help desk services slightly less favourably than help functionalities, with up to one-third of respondents indicating that the support features do not meet their needs (see Figure 38). Together with the relatively small share of respondents who strongly agreed that help desk services provide useful assistance, these results indicate that this feature could be further improved.

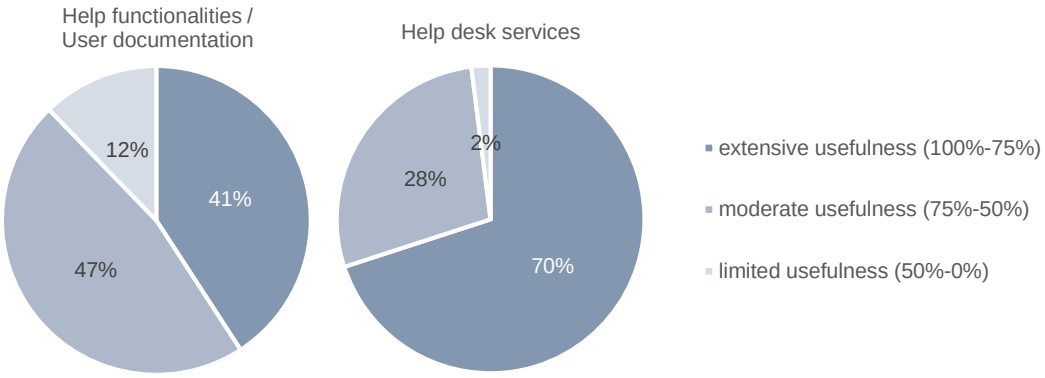
**Figure 38. Usefulness of support features of e-Cohesion systems**




*Source: evaluation team, based on the survey of authorities - Q.24 and the survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the indicated electronic data exchange system you used:"*

When looking at user satisfaction with the support features of various e-Cohesion systems, the results are similar. This indicates that most systems meet their users' needs in this respect (see Figure 39 below). Nearly half of all evaluated systems provide help functionalities that are extensively regarded as useful, meaning that they are considered valuable by more than 75% of respondents. Similarly, most systems provide help desk services that are extensively considered useful by beneficiaries. A small share of systems provides support features that are perceived as being of limited usefulness, meeting the needs of less than half of their users.

**Figure 39. Share of systems according to the overall usefulness of support features (survey of beneficiaries)**




*Source: evaluation team, based on the survey of beneficiaries - Q.18 "Do you agree or disagree with the following statements describing the user-friendliness and effectiveness of the indicated electronic data exchange system you used:"*

*Note: This chart covers systems for which at least 10 survey responses were received from beneficiaries (N=49).*

**Well-implemented help functionalities and help desk services that meet users' needs contribute to the overall user-friendliness of e-Cohesion systems and can serve purposes beyond supporting users.** Interviews conducted with users of e-Cohesion systems as part of the case studies further indicate that users strongly value **well-developed help functionalities** (e.g. clear instructions/tool tips) and **comprehensive user documentation** (e.g. an online library with written manuals and videos). The absence of such features, or their incoherent implementation, may increase the need for users to reach out to their system's help desk, which can represent an additional burden.

Another example of good practice in this area is the implementation of **standard processes with regard to providing user support**, e.g. by maintaining an internal IT help desk that reviews and tries to address issues that arise, and which forwards complex requests or technical problems to specialised agencies. Responses from beneficiaries highlight that an accessible and responsive help desk can contribute to a system's user-friendliness and improve communication between beneficiaries and authorities. Authorities can also use this channel to gather additional feedback from users and keep track of common challenges and reoccurring technical issues, to further improve the system. This aspect further relates to the collection and incorporation of user feedback into system development, which tends to produce higher levels of user-friendliness (see Section 4.1 on Relevance).

Lastly, the frequently expressed need for a **chat functionality** to reach out to authorities and other system users may indicate that other communication channels (e.g. e-mail, online forms) used to exchange project-related information, but also for support purposes in general, may not always be sufficiently comprehensive or responsive.

**Box 9. Good-practice examples of sophisticated support features**

**Monitoring Information System (MIS) – Greece**

In addition to extensive help functionalities (e.g. an online library providing relevant information to assist users in the form of written manuals and videos, as well as guidelines and information about provided calls for proposals), the MIS provides a two-tier help desk to deal with issues and underlying problems. When an issue arises, the user first contacts the IT officer of the MA. If no solution can be found, or if the issue is caused by an underlying technical problem that cannot be solved by the MA, the information is passed on to the MIS Special Agency to resolve the issue. Interviewees describe the help desk feature as very useful, and the response time and the quality of response as satisfactory.

**Balcão2020 – Portugal**

Respondents report that the help desk feature of Balcão2020 is very easy to use, as only a little additional information needs to be entered along with the request. When filling in the contact form, the user must indicate the type of request, so the specific nature of their issue can be easily identified and automatically directed to the right office/authority (e.g. the IT Team for solving technical issues, MAs for issues concerning the project). The help desk functionality is considered useful by the beneficiaries interviewed, who highlighted that this feature improved communication between them and the authorities. A call centre will also be set up to further strengthen the help desk service and reduce the response time for users' requests.

*Source: evaluation team, based on in-depth interviews with authority representatives and beneficiaries.*

# 5. Key challenges and potential solutions

This section of the report concludes the evaluation's findings from the perspective of the challenges to the efficient implementation and functioning of e-Cohesion systems, and how these can be addressed. Thus, each challenge identified is accompanied by a specific (potential) solution, or set of solutions, addressed mainly to the authorities responsible for e-Cohesion systems. These solutions address generalised challenges and may not be globally relevant to everyone. Some systems may not face the challenge tackled by a particular solution. Furthermore, e-Cohesion systems operate within the environments of different national/regional programmes; they also differ in terms of their connectedness with national monitoring systems (see Section 2.1 for more on this discussion). Therefore, all of these specificities of the systems should be considered when judging the relevance of each potential solution.

**Challenge no. 1:** Ensuring effective interoperability with other systems and registers

Interoperability is the major challenge of e-Cohesion. At a conceptual level, interoperability demands that concepts, processes, structures and rules be standardised to a certain degree. Standardisation represents an essential prerequisite for the use of a common e-Cohesion system. In this respect, differences may occur at both within a programme and at a programme-crossing level that can impede the operation of e-Cohesion. At programme level, different calls or authorities (e.g. intermediate bodies) may have specific requirements (additional fields, specific validation rules or even sub-workflows). Such differences exist more often if different programmes are considered. Even in contexts characterised by a high degree of harmonisation – e. g. where similar management and control systems are used – some flexibility needs to be provided through appropriate technical solutions.

At a technical level, interoperability is realised by interface solutions. These depend not only on the e-Cohesion system but also on the structure of connected systems; therefore, development can become demanding. This is also true with regard to the maintenance of such solutions, due to changes in connected systems, which may subsequently affect the interface of the e-Cohesion system.

**Potential solution no. 1.1:** aim to establish 'once-only encoding' at a system-crossing level (connect the e-Cohesion system to external systems such as government registers).

The principle of 'once-only encoding' has shaped e-Cohesion systems most significantly.

Compliance with this principle is a complex technical and organisational challenge.

In addition to re-using information that stems from previous project selection and implementation steps, sophisticated systems make use of interface connections to external systems (such as government registers) to validate and access existing information. The extraction of information from external databases facilitates the submission process and reduces the risk of errors.

**Potential solution no. 1.2:** harmonise and simplify concepts (names, definitions, descriptions), structures (roles), processes (workflow), tools (forms, templates, documentation) and rules (business logic)

For e-Cohesion systems that are used by many programmes, or within programmes that encompass many different priorities and types of projects, harmonise and simplify concepts

(names, definitions, descriptions), structures (roles), processes (workflow), tools (forms, templates, documentation) and rules (business logic).

A certain degree of standardisation of concepts, rules, processes and structures is a prerequisite for using a common e-Cohesion system. Differences may occur between different calls and sub-organisations at a programme level (e.g. intermediate bodies). At a programme-crossing level, differences can be addressed by coordinating common management and control systems or other initiatives that are aimed at harmonisation (e.g. HIT developed for Interreg programmes). In addition, programmes should consider the legal need for specific actions and avoid 'gold plating' activities (e.g. by going beyond minimum requirements in ways that may impose additional and unnecessary burdens).

**Potential solution no. 1.3:** offer sufficient flexibility to address programme- and call-specific requirements.

Specific requirements may occur in such fields as validation rules, additional fields and sub-workflows, as well as reporting and analysis. Differentiate those processes that are suitable for harmonisation (e.g. handling progress reports and payments) from processes where flexible approaches are needed (e.g. application). One good way to support specific requirements is to offer plug-in solutions that offer additional functionalities without affecting the core of the system.

In addition, it should be possible to configure certain properties without programming work being necessary. The ultimate set of flexible settings is to be decided, but it could include: properties (languages, currencies, priorities, indicators, cost types, etc.); alternative parts of the workflow (one-step/two-step); additional fields; validation; analysis and reporting; calculation of financing; and simplified cost options.

**Potential solution no. 1.4:** focus on the exchange and integration of structured data, do not merely consider the exchange of unstructured documents (such as pdf files and other office documents).

Data should be captured in a structured way to enable further processing of them; for example, to use them in calculations. Do not merely exchange unstructured information on indicators, costs and financing, such as pdf files. Excel files might be a useful tool for uploading, but the data should be non-redundantly recorded and stored in a database.

To employ once-only encoding and data integration, the data scheme should be defined in a process-crossing way. In consequence, roles working in different processes share the same data, and the same data do not have to be re-entered. This reduces the duplication of work and avoids inconsistencies. Data integration can be realised by using a centralised database and interface solutions that allow the real-time synchronisation of transactional data.

Consider e-Cohesion, transactional monitoring and analytical tasks as connected processes that in large part make use of the same data.

**Challenge no. 2:** Complexity and dynamic change

The development and maintenance of an e-Cohesion system is a complex task. In addition to technical aspects, organisational and legal aspects need to be considered. e-Cohesion is closely connected with other aspects of IT supporting programme implementation, namely transactional monitoring as well as business intelligence and document management. During the seven years

of a funding period, changes of rules, structures and processes, as well as technological progress, lead to subsequent changes in requirements that need to be addressed.

Furthermore, tight deadlines – in combination with requirements that occur late in the development process – also need to be tackled.

Examples still exist where relevant functionalities are missing from e-Cohesion systems, and information exchange therefore takes place outside the system.

**Potential solution no. 2:** aim to provide an effective solution that covers all relevant e-Cohesion processes of information exchange.

Only a minority of existing e-Cohesion systems do not support information exchange during project selection. Project selection and implementation are strongly interrelated – which is why support for application creation and submission is already seen as beneficial, even if not legally required. Ensure that financing, as well as withdrawals and recoveries, are sufficiently well supported. The necessity for parallel bookkeeping using Excel files is an indication that something in the e-Cohesion system is still missing. Provide the ability to upload and exchange digitised supporting documents, as these are necessary for verification and audits. Provide appropriate communication features to replace the additional exchange of emails. This ensures that all relevant information is accessible within the system

Ultimately, the e-Cohesion system constitutes a single point of data and information exchange that contributes to the traceability of all decisions and actions taken, as well as providing access to previously submitted documents, and simplifying key processes for authorities (e.g. audit and certification activities).

We also note that the best systems provide transparent and fully available access to relevant documents, guidelines, previously submitted files, and protocols. This feature requires a system to save all submitted documents, track changes, and follow authorisation rules.

**Challenge no. 3:** Users' growing expectations

Users of all roles in programme implementation become increasingly familiar with using e-government and e-business solutions. In addition to growing skills in working with respective solutions, this also results in higher expectations with regard to the effectiveness, efficiency and user-friendliness of a system. Stakeholders demand that e-Cohesion systems provide appropriate functionalities to cover all project selection and implementation processes. As well as clearly defined and frequently repeated transactional processes, such as creating and submitting progress reports and payment claims, these processes also include *ad hoc* communication, change requests and audits.

Beneficiaries often have to address requests to authorities. Sometimes, they may have a specific question about a particular project file or data point. This requires them to communicate with all involved parties, which they can do either via parallel channels or on the platform. Our evaluation findings show that currently, this communication often takes place outside of e-Cohesion systems

Activities such as collecting, inserting and checking expense information may cause significant effort, and users expect support for faster and easier process realisation. They also demand equally high degrees of self-descriptiveness, support, flexibility, performance and stability. Most beneficiaries do not use the e-Cohesion system daily. They expect the system to be self-descriptive and to require no additional training. In case of a problem, they expect access to appropriate support. Furthermore, users expect to execute actions in a flexible order that fits their needs and preferences. To ensure appropriate performance, data traffic during periods of high usage (e.g. before the end of a call) needs to be estimated precisely.

Beneficiaries sometimes manage several projects that are worth significant amounts. In addition to support for transactional processes, they also demand access to analytical data and functionalities to support decision making.

**Potential solution no. 3.1:** be user-centric, and aim for high user-friendliness and efficiency.

Focus on those processes that cause most of the administrative burden for the roles involved (e.g. capturing and checking expenses, managing staff costs and procurements). Aim to increase process efficiency, speed up process throughput, and reduce repetition.

Prioritise the development of desired features on the basis of costs and benefits. Involve users of all roles in development (intermediate bodies, beneficiaries/applicants, financial controllers). To enable continuous improvement, also collect, analyse and consider user feedback throughout everyday operations.

Improve user-friendliness by offering a solution that provides a clear structure, a high degree of self-descriptiveness, and easy navigation between different views (e.g. progress report and application). Offer appropriate help functionality, documentation and user support.

Provide enough room for flexibility so that users can execute actions in an order that fits their needs and preferences.

**Potential solution no. 3.2:** aim for a high-quality user experience by offering functionalities that can maximise the benefits for the system's users

- Ensure that the system offers appropriate performance and stability during periods of high traffic (e.g. before the end of a call for applications). Consider using cloud-based server infrastructures that provide a high level of scalability (i.e. flexible adaptation of calculation and memory capacity).
- To ensure a high standard of user experience, features should be provided such as tool tips and client-side validation checks offering users immediate feedback with regard to missing or wrong values.
- Introduce the calculation of lump sums and flat rates as part of automatic calculations. Also, good practice in automatic calculations includes the automatic calculation of exchange rates for programmes that have to handle different currencies. To further reduce administrative burden, also provide support for staff cost calculations and management of procurements.
- Provide beneficiaries with reporting and analysis features, as well as access to project-crossing analytical information. For the implementation of online status tracking, the system should provide dashboard functionalities that offer users an overview of a project's status, as well as the status of related information objects (e.g. modification requests, payment claims, progress reports). The overview should also provide information on quantitative data (e.g. the planned and realised values of eligible costs), important events, actions to be taken and deadlines. It is good practice to provide beneficiaries with access to standard reports and analysis features (business intelligence).
- To fully exploit the availability of previous documents processed by the system, the system should provide users with access to all previously submitted documents, based on the relevant access rights. Provide integrated access to all exchanged documents and flexible retrieval functionalities, allowing full-text search and the application of Boolean expressions[51]. Provide user-friendly features to analyse changes between different versions of submitted documents (e.g. modification requests and applications).

[51] A Boolean expression is a combination of different search criteria with AND and OR connections. This enables flexible and specific search functions.

- Set up a dedicated chat function for communicating with all categories of users, including authorities, when needed. This should be a valuable replacement for e-mail, phone calls and personal visits. The communication functionalities should streamline communication with authorities as well as requests and the implementation of corrections.

**Challenge no. 4:** Legal aspects

Within the context of many programmes, the exchange of legally binding documents demands the application of e-signatures which make use of advanced and qualified digital signatures. To replace the need for handwritten signatures, the mere combination of a login name and password (simple e-signature) is often insufficient. In many Member States, the availability of such services is still not very high. Uncertainties with regard to the implementation of technical solutions to replace the necessity for handwritten signatures still represents a barrier for some decision makers. Similar problems exist concerning the handling of digital verification documents designed to replace paper-based originals, including the question of digital archiving.

Many uncertainties also exist with regard to data privacy and GDPR. Personal information about staff members, including their names and contact details as well as salaries, need to be protected by appropriate technical and organisational measures.

**Potential solution no. 4:** provide powerful system features to ensure legal compliance.

Addressing horizontal requirements such as the legal validity of exchanged documents, privacy and data security demands the implementation of appropriate features.

First, e-Cohesion systems should provide an easy-to-use e-signature feature to replace the necessity for handwritten signatures. Depending on the prevailing rules, this may be based on a simple, advanced, or qualified certificate. Solutions can be different for different users and use cases. The system should manage the handling and archiving of unstructured supporting documents to support audits and verifications.

To meet GDPR-related requirements, the system should also integrate appropriate technical and organisational measures such as the encryption of sensitive information. It should also be considered and specified how this personal data, collected within the framework for the implementation of a project, can be shared with other regional or national registers and databases, to enable the two-way exchange of data.

Presenting the solution officially as the only option for data exchange reduces the effort involved in maintaining parallel digitised and paper-based processes. However, individual exceptions may need to be applied.

**Challenge no. 5:** Availability of versatile staff

Setting up, operating and maintaining an e-Cohesion system demands both IT skills and knowledge of programme implementation. An e-Cohesion system uses a wide range of IT technologies such as databases, front-end components, interfaces, programming languages and frameworks. In addition, development methodologies and project management must be applied. Programme implementation is characterised by specific concepts, structures, processes and rules. The recruitment of the project team needs to provide the necessary combination of knowledge and experience.

**Potential solution no. 5:** aim for an appropriate combination of IT skills and knowledge of programme implementation.

Make use of state-of-the-art technologies, a flexible IT architecture and of lessons learned.

A flexible IT architecture makes it possible to change components of the presentation layer and to offer a better user experience without changing the underlying business logic or database. In general, the presentation layer (which constitutes the user interface) is adapted and exchanged more often than the underlying business logic or database.

Follow a long-term strategy to build up crucial IT skills and business knowledge of programme implementation in your team.

Think big and start small. Follow an evolutionary and agile development approach, and take account of the fact that new requirements will probably appear after deployment. Prioritise the development of different modules according to their role in the programme's lifecycle, and consider dependencies between the different modules.

# Annexes

## Annex 1.1. Mapping of e-Cohesion systems – provided in a separate file

## Annex 1.2. Mapping – coverage of OPs and Interreg programmes – provided in a separate file

## Annex 2. Fiches – provided in a separate file

# Annex 3. Analysis of changes in e-Cohesion: 2014-2020 compared with 2021-2027

| Categorisation | Source / citation | 2014-2020 | 2021-2027 – only CPR | | Conclusions of comparison |
|---|---|---|---|---|---|
| **General provision** | CPR Art. 122(3) | Member States shall ensure that no later than 31 December 2015, all exchanges of information between beneficiaries and a managing authority, a certifying authority, an audit authority and intermediate bodies can be carried out by means of electronic data exchange systems. | CPR Art. 69(8) | Member States shall ensure that all exchanges of information between beneficiaries and the programme authorities are carried out by means of electronic data exchange systems in accordance with Annex XIV. | The previous requirements set the deadline and foresaw the voluntary use of the systems, requiring that data exchanges "can be carried out", or implying that beneficiaries should have the possibility to exchange files electronically. The new provisions make electronic exchange of information mandatory.<br><br>The 2014-2020 provisions were specified further, allowing Member States to mandate the use of a system [CIR Art. 9(2)]; however, they had to ensure that everyone could access it. The requirements also mentioned that in cases of *force majeure*, paper submission must be possible. The 2021-2027 requirements provide that while the MA can grant waivers in individual cases, all exchanges of information between beneficiaries and the programme authorities must be carried out through the system [CPR Art. 69(8)]. |
| **Enforcement of implementation** | CIR Art. 10(8) | Member States shall ensure that all beneficiaries can use the electronic data exchange systems referred to in Article 122(3) of Regulation (EU) No 1303/2013, including the beneficiaries of ongoing operations at the date on which the electronic data exchange systems become operational and to which electronic data exchange applies. | Not addressed. | | |
| | CIR Art. 10(7) | In cases of *force majeure*, and in particular of malfunctioning of the electronic data exchange systems or a lack of a lasting data connection, the beneficiary concerned may submit the information required to the competent authorities in the forms and using the means determined by the Member State for such cases. As soon as the cause of the *force majeure* ceases, the Member State shall ensure that the relevant documents are integrated into the database related to the electronic data exchange systems.<br><br>By way of derogation from paragraph 3, the date taken into account for submitting the required information shall be deemed to be the date of sending of the documents in the required forms. | CPR Art. 69(8) | By way of derogation from the first subparagraph, the managing authority may exceptionally accept, upon the explicit request of a beneficiary, the exchanges of information in paper format, without prejudice to its obligation to record and store data in accordance with point (e) of Article 72(1). | |
| | CIR Art. 9(2) | If a Member State, on its own initiative, imposes a compulsory use of electronic data exchange systems upon beneficiaries, it shall ensure that the technical characteristics of those systems will not disrupt smooth implementation of the Funds nor restrict access for any beneficiaries.<br><br>This requirement does not apply to electronic data exchange systems for beneficiaries which were made compulsory by a Member State during a | Not addressed. | | |

| Categorisation | Source / citation | 2014-2020 | 2021-2027 – only CPR | | Conclusions of comparison |
|---|---|---|---|---|---|
| | | previous programming period and comply with other requirements laid down in this Regulation. | | | |
| **Principle of implementation** | Not addressed. | | CPR Art. 69(8) | Member States shall promote the benefits of electronic data exchange and provide all necessary support to beneficiaries in this respect. | The 2021-2027 requirements emphasise that Member States must support the electronic data exchange system and promote its benefits. The 2014-2020 provisions do not include such a principle. |
| **Definition** | CIR Art. 8(1) | Electronic data exchange systems', as referred to in the first subparagraph of Article 122(3) of Regulation (EU) No 1303/2013 shall mean mechanisms and instruments allowing the electronic exchange of documents and data, including audiovisual media supports, scanned documents and electronic files. | Not addressed. | | The 2021-2027 provisions do not provide a definition of electronic data exchange systems. |
| **Scope of application of Implementation** | CPR Art. 122(4) | Paragraph 3 shall not apply to the EMFF. | CPR Art. 69(8) | For programmes supported by the EMFAF, the AMIF, the ISF and the BMVI, the first subparagraph shall apply as from 1 January 2023.<br>The first subparagraph shall not apply to programmes or priorities under point (m) of Article 4(1) of the ESF+ Regulation. | The 2014-2020 regulations specify only one exception, the EMFF. The 2021-2027 provisions provide a deferral for the EMFAF, AMIF, ISF, and BMVI until 1 January 2023.<br>The 2021-2027 CPR also excludes programmes or priorities addressing material deprivation through food and/or basic material assistance to the most deprived persons, including children, and providing accompanying measures supporting their social inclusion. |
| **Implementation follow-up** | CPR Art. 122(3) | The Commission shall adopt implementing acts laying down detailed rules concerning the exchanges of information under this paragraph. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 150(3). | Not addressed. | | The 2014-2020 Regulations required the Commission to adopt Implementing Acts concerning the exchange of information. The 2021-2027 CPR did not require this, and instead mandated the Member States to have in place an updated description of the management and control system by 30 June 2023. |
| | Not addressed. | | CPR Art. 69(11) | Each Member State shall have in place, at the latest by the time of submission of the final payment application for the first accounting year and no later than 30 June 2023, a description of the management and control system in accordance with the template set out in Annex XVI. It shall keep that description | |

| Categorisation | Source / citation | 2014-2020 | 2021-2027 – only CPR | | Conclusions of comparison |
|---|---|---|---|---|---|
| | | | | updated to reflect any subsequent modifications. | |
| **Key principles: interoperability and once-only encoding** | CPR Art. 122(3) | The systems referred to in the first subparagraph shall facilitate interoperability with national and Union frameworks and allow for the beneficiaries to submit all information referred to in the first subparagraph only once. | Not directly addressed. | | The 2021-2027 provisions did not mention interoperability directly. |
| | CIR Art. 10(4) | Submission of documents and data through the electronic data exchange systems shall be made only once as referred to in the second subparagraph of Article 122(3) of Regulation (EU) No 1303/2013 as regards the same operation for all authorities implementing the same programme.<br>These authorities shall work together at legal, organisational, semantic and technical levels ensuring effective communication, as well as the exchange and re-use of information and knowledge.<br>This is without prejudice of processes allowing the beneficiary to update erroneous or obsolete data or unreadable documents. | Not directly addressed. | | The 2021-2027 provisions did not mention the principle of once-only encoding directly. |
| **Key processes** | CIR Art. 8(1) | The exchange of documents and data shall include reporting on progress, payment claims and exchange of information related to management verifications and audits. | Annex XIV – 1.5 | Ensuring record-keeping and data storage in the system enabling both administrative verifications of payment claims submitted by beneficiaries in accordance with Article 74(2) and audits. | The 2014-2020 Regulations directly specify that the electronic exchange of documents must include progress reporting, payment claims, verifications and audits. The 2021-2027 provisions only mention administrative verification. |
| | CIR Art. 8(2) | The electronic data exchange systems shall enable administrative verification in respect of each application for reimbursement by beneficiaries under Article 125(5) of Regulation (EU) No 1303/2013 and audits to rely on information and documents available through the electronic data exchange systems, when such information and documents are exchanged in electronic form in compliance with Article 122(3) of that regulation. Paper documents may only be requested by these responsible authorities in exceptional cases, following a risk analysis, and only if paper documents are the true source of the scanned documents uploaded in the electronic data exchange systems. | CPR Art. 69(8) | By way of derogation from the first subparagraph, the managing authority may exceptionally accept, upon the explicit request of a beneficiary, the exchanges of information in paper format, without prejudice to its obligation to record and store data in accordance with point (e) of Article 72(1). | The 2014-2020 CIR allows for paper-based exchange in exceptional cases, preceded by a risk analysis and with the submission of scanned documents online. The 2021-2027 CPR makes a general claim about the rights of beneficiaries to submit information in paper format in exceptional cases. |

| Categorisation | Source / citation | 2014-2020 | 2021-2027 – only CPR | | Conclusions of comparison |
|---|---|---|---|---|---|
| **Technical and organisational features used to ensure information security** | CIR Art. 9(1) | The electronic data exchange systems shall ensure data security, data integrity, data confidentiality, authentication of the sender in accordance with Articles 122(3), 125(4)(d), 125(8) and 140 of Regulation (EU) No 1303/2013. | Annex IV – 1.1 | Ensuring the data security, data integrity, data confidentiality, authentication of the sender in accordance with Articles 69(6), 69(8), point (e) of Article 72(1) and Article 82. | The information security requirements are the same in both documents. |
| **Operational outside office hours** | CIR Art. 9(1) | The electronic data exchange systems shall be available and operational during and outside standard office hours, except for technical maintenance activities. | Annex IV – 1.2 | Ensuring availability and functioning during and outside standard office hours (except during technical maintenance). | The operational hours requirements are the same in both documents. |
| **Functionalities** | CIR Art. 9(3) | The electronic data exchange systems shall be equipped with at least the following functionalities:<br>a) interactive forms and/or forms prefilled by the system on the basis of the data which are stored at consecutive steps of the procedures;<br>b) automatic calculations where applicable;<br>c) automatic embedded controls which reduce repeated exchanges of documents or information as far as possible;<br>d) system-generated alerts to inform the beneficiary that certain actions can be performed;<br>e) online status tracking allowing the beneficiary to monitor the current status of the project;<br>f) availability of all previous data and documents processed by the electronic data exchange system. | Annex IV – 1.4. | Use of functionalities in the system providing for:<br>a) interactive forms and/or forms prefilled by the system on the basis of the data which are stored at consecutive steps of the procedures;<br>b) automatic calculations, where applicable;<br>c) automatic embedded controls which reduce repeated exchanges of documents or information;<br>d) system-generated alerts to inform the beneficiary that certain actions can be performed;<br>e) online status tracking allowing the beneficiary to monitor the current status of the project;<br>f) all previously available data and documents processed by the electronic data exchange system. | The functionalities of e-Cohesion systems are the same in both documents. |
| **Functionalities** | CIR Art. 10(3) | The date of transmission of documents and data by the beneficiary to the authorities referred to in the first subparagraph of Article 122(3) of Regulation (EU) No 1303/2013 and vice versa shall be considered to be the date of electronic submission of the information which is stored in the electronic data exchange systems. | Annex IV – 2.2 | Providing for storing the date of transmission of documents and data by the beneficiary to the programme authorities and vice versa. | Requirement for e-Cohesion systems to store the date of transmission of documents and data are the same in both documents. |

| Categorisation | Source / citation | 2014-2020 | 2021-2027 – only CPR | | Conclusions of comparison |
|---|---|---|---|---|---|
| **User-friendliness** | Not addressed | | Annex IV – 1.3 | Ensuring that the system aims to make use of logical, simple and intuitive functions and interface | The 2021-2027 CPR explicitly emphasises the important of user-friendliness of functions and interfaces. |
| **Change request / modification request** | CIR Art. 10(1) | The beneficiaries and the authorities referred to in the first subparagraph of Article 122(3) of Regulation (EU) No 1303/2013, shall add the documents and data for which they are responsible, and any updates thereto, to the electronic data exchange systems in the electronic format defined by the Member State.<br>The Member State shall lay down detailed terms and conditions of electronic data exchange in the document setting out the conditions for support for each operation referred to in Article 125(3)(c) of Regulation (EU) No 1303/2013. | Not addressed. | | The 2021-2027 CPR does not explicitly mention change requests/modification requests, but there are numerous provisions (50+) on the need to ensure updated/modified information and data throughout the text. |
| **E-signature** | CIR Art. 10(2) | Exchanges of data and transactions shall bear an electronic signature compatible with one of the three types of electronic signature defined by Directive 1999/93/EC of the European Parliament and of the Council ([5]). | Annex IV – 2.1 | Ensuring the use of electronic signature compatible with one of the three types of electronic signature defined by Regulation (EU) No 910/2014 of the European Parliament and of the Council ([1]). | The requirements for e-signature are similar, but the 2021-2027 provisions refer to the 2014 Regulation |
| **Interface** | CIR Art. 10(5) | The electronic data exchange systems shall be accessible either directly through an interactive user interface (a web application) or via a technical interface that allows for automatic synchronisation and transmission of data between beneficiaries' and Member States' systems. | Annex IV – 2.3 | Ensuring accessibility directly through an interactive user interface (a web application) or via a technical interface that allows for automatic synchronisation and transmission of data between beneficiaries' and Member States' systems. | The requirements for interactive forms in e-Cohesion systems are the same in both documents. |
| **GDPR** | CIR Art. 10(6) | When processing information, the electronic data exchange systems shall guarantee the protection of privacy of personal data for individuals and commercial confidentiality for legal entities according to Directive 2002/58/EC of the European Parliament and of the Council ([6]), Directive 2009/136/EC of the European Parliament and of the Council ([7]) and Directive 95/46/EC of the European Parliament and of the Council ([8]) | Annex IV – 2.4 | Ensuring the protection of privacy of personal data for individuals and commercial confidentiality for legal entities according to Directive 2002/58/EC of the European Parliament and of the Council (2) and Regulation (EU) 2016/679. | The 2021-2027 provisions refer to the GDPR regulation, which did not exist when the 2014-2020 requirements were drafted. |

# Annex 4. Operationalisation of evaluation criteria

| Evaluation criteria | Evaluation questions | Judgement criteria | Data sources and methods |
|---|---|---|---|
| **Relevance** | **EQ1.** To what extent do the different types of e-Cohesion systems and key functionalities available meet the needs for exchange of data, documents and information of the different types of users of these systems? | Meets the needs if a large majority of different categories of users agree that the relevant key elements of the e-Cohesion systems meet their needs; if no major categories of (potential) users have been excluded from using the e-Cohesion systems;<br>Identify whether e-Cohesion systems are used by the relevant stakeholders throughout the various key processes;<br>A list of functionalities by type of user for which the e-Cohesion systems are mostly used / functionalities that are the most important;<br>Identify needs that are currently not being met. | Mapping of e-Cohesion systems;<br>Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ2.** How did the e-Cohesion systems adapt to the evolving needs of the relevant stakeholders? | Identify evidence that users' feedback is being collected by authorities;<br>Identify whether the systems are being further developed and improved. | Survey of beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ3.** What external factors make an e-Cohesion system (more or less) relevant for different types of users? | A list of contextual factors influencing relevance that were mentioned by different types of respondents. | Survey of authorities. |
| **Coherence** | **EQ4.1.** (internal coherence) To what extent do authorities of the programme have access rights to the system and share data among themselves? | The systems are internally coherent in terms of the re-use of information if information only needs to be encoded once by beneficiaries, and is shared between different authorities | Mapping of e-Cohesion systems;<br>Survey of authorities. |
| | **EQ4.2.** (internal coherence) To what extent are the e-Cohesion systems introduced and/or developed for the period 2014-2020 compatible and/or complementary with relevant national register databases and other systems of electronic exchange for the administration of other EU funds in the Member States? | The systems are compatible and complementary if e-Cohesion systems are compatible with other public electronic systems, registers and databases in the Member States, and can source and exchange information with them. | Mapping of e-Cohesion systems;<br>Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ5.** (external coherence) To what extent are the e-Cohesion systems compatible and/or complementary with the System for Fund Management (SFC) and other Commission's systems of electronic exchange of data, documents and information (e.g. keep (Interreg))? | The systems are compatible and complementary if e-Cohesion systems are or could be linked to SFC 2014 (as well as to any other relevant systems such as keep.eu (Interreg)). | Mapping of e-Cohesion systems;<br>Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. |

| Evaluation criteria | Evaluation questions | Judgement criteria | Data sources and methods |
|---|---|---|---|
| **Effectiveness** | **EQ6.** To what degree does the operation of the e-Cohesion system implement the legal requirements? | Effectiveness is deemed high if the majority of the legal requirements are implemented in practice, as per the mapping framework:<br>▪ principles;<br>▪ key processes;<br>▪ functionalities;<br>▪ data security requirements. | Mapping of e-Cohesion systems;<br>Surveys of authorities and beneficiaries;<br>Webinar with authorities;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ7.** Does the use of the e-Cohesion system lead to (perceived) simplification (differentiated by type of user and process)? | Effectiveness is deemed high if all of the different types of users/respondents report that e-Cohesion has simplified the way in which they handle information in at least some of their key processes;<br>Effectiveness is high if most users of different types report improvements in terms of:<br>▪ reduced repeated transmission of the same information;<br>▪ data and information quality, such as lower error rate, data being more up-to-date, consistency, volume and granularity of data;<br>▪ communication (such as greater speed, accuracy, clarity, and the avoidance of misunderstandings);<br>▪ transparency and accessibility of relevant information. | Surveys of authorities and beneficiaries. |
| | **EQ8.** Does the use of the e-Cohesion system lead to a (perceived) reduction of administrative burden and cost (differentiated by type of user and process) in a longer term? | e-Cohesion has led to a reduction in administrative burden if:<br>▪ beneficiaries report (and provide valid examples) that e-Cohesion has reduced administrative burden in their key processes in the long term;<br>▪ users from programme authorities report (and provide examples) that e-Cohesion has reduced administrative cost in their key processes in the long term.<br>Identification of other key results for beneficiaries and authorities produced by e-Cohesion systems. | |
| **Efficiency** | **EQ9.** For each user type and process for which e-Cohesion is used: where did e-Cohesion lead to improvements or make things worse? | Efficiency is deemed high if most users of different types report gains in terms of resources or time in most of their relevant processes (such as faster entry, sharing and retrieval of data). | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ10.** To what extent are the benefits of e-Cohesion systems higher or lower than its costs (per type of user)? | Efficiency is deemed high if most users of different types think the benefits of the e-Cohesion system significantly outweigh its costs or burden on them, and in comparison to the previous paper-based processes. | |
| | **EQ11.** For each user type and process: which actions within the workflow cause the most effort (data capturing, checking, searching, coordinating)? | Processes identified by different types of users/respondents as causing the most effort and constituting the biggest administrative cost or (necessary/ unnecessary) burden. | |

| Evaluation criteria | Evaluation questions | Judgement criteria | Data sources and methods |
|---|---|---|---|
| **EU added value** | **EQ12.** To what extent has the e-Cohesion initiative (as defined in the CPR) contributed to the development of electronic data exchanges systems in the Member States? | Identify whether the electronic data exchange systems already existed between authorities and beneficiaries, or were being developed prior to e-Cohesion initiative;<br>Opinion of the authorities as to whether the e-Cohesion initiative provided the decisive impetus for the development/ improvement of electronic data exchange systems;<br>Opinion of the authorities as to whether the audits of functioning of the management and control systems carried out by the Commission provided valuable recommendations for improving e-Cohesion systems. | Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies;<br>Mapping of e-Cohesion systems. |
| | **EQ13.** To what extent has the introduction of e-Cohesion systems contributed to the dissemination of good practice and policy learning to other policy areas in the Member States? | The extent is deemed large (high added value) if there is compelling evidence that e-Cohesion led to:<br>▪ similar national systems being set up for other policies due to learning from the e-Cohesion promoted by the Commission;<br>▪ common business processes and standards created and implemented in managing similar public policy interventions. | Survey of authorities;<br>In-depth desk research and interviews under in-depth case studies. |
| **User-friendliness** | **EQ14**. Is the e-Cohesion system self-descriptive (clear structure, feedback via tool tips, etc.) and intuitively useable? | User-friendliness is deemed high if most users/respondents of different types:<br>▪ characterise the system as self-descriptive and clear;<br>▪ agree that using it does not require (extensive) training;<br>▪ agree that the system helps users to understand what operating steps to follow;<br>▪ find the user interface appealing and easy to use;<br>▪ are happy with the clarity and level of complexity of the system. | Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ15.** Does the e-Cohesion system have the main functionalities, as per e-Cohesion requirements, that facilitate user-friendliness? | User-friendliness is deemed high if:<br>▪ e-Cohesion systems support key functionalities closely related to user-friendliness;<br>▪ most users/respondents of different types consider key functionalities to be useful (they simplify their key processes and the way in which they handle the exchange of information). | Mapping of e-Cohesion systems;<br>Surveys of authorities and beneficiaries;<br>In-depth desk research and interviews under in-depth case studies. |
| | **EQ16.** Does the e-Cohesion system provide help functionality and a help desk service? | User-friendliness is deemed high if:<br>▪ most users/respondents of different types are happy with the system's help functionality and user documentation (software features);<br>▪ most users/respondents of different types agree that the help desk service (organisational function) provides helpful assistance. | |

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Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

### EU publications

You can download or order free and priced EU publications at: https://op.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

### EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: http://eur-lex.europa.eu

### Open data from the EU

The EU Open Data Portal (http://data.europa.eu/euodp/en) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial purposes.

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