FENIX Project

A European Federated Network of Information exchange in Future Logistics

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Innovation & Deployment

ERTICO-ITS EUROPE

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OUTLINE

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- Beyond AEOLIX→DTLFI SG2
- FENIX objectives
- Architecture overview
- Pilot sites
- FENIX→DTLFII SG2

INTRODUCTION

AN OPEN PROBLEM

- **Supply chain efficiency largely depends upon data and information** – how it is collected, processed, stored, updated, interpreted, understood, and exploited.
- **On operational level,** actors need real- time information, to be able to make effective decisions.
- **On tactical and strategic levels**, transportation systems need increased connectivity.
- **Existing systems & platforms are currently not linked to each other,** thus missing the opportunity to optimize the performance of their cooperation.
- There is the need of a federated architecture of platforms- **even when each platform is realised with different technology- for connecting logistics** information systems with different characteristics, intra- and cross-company, for immediate (real-time) exchange of information **to create interoperability between different platforms**.

FENIX NETWORK

INTRODUCTION


Data exchange


Data posting


Risk prediction


E-CMR


Visibility services

CO2 monitoring


Port services


Data sharing


Data collection


Marketplace


Custom services


Control Tower


Estimated Time of Arrival

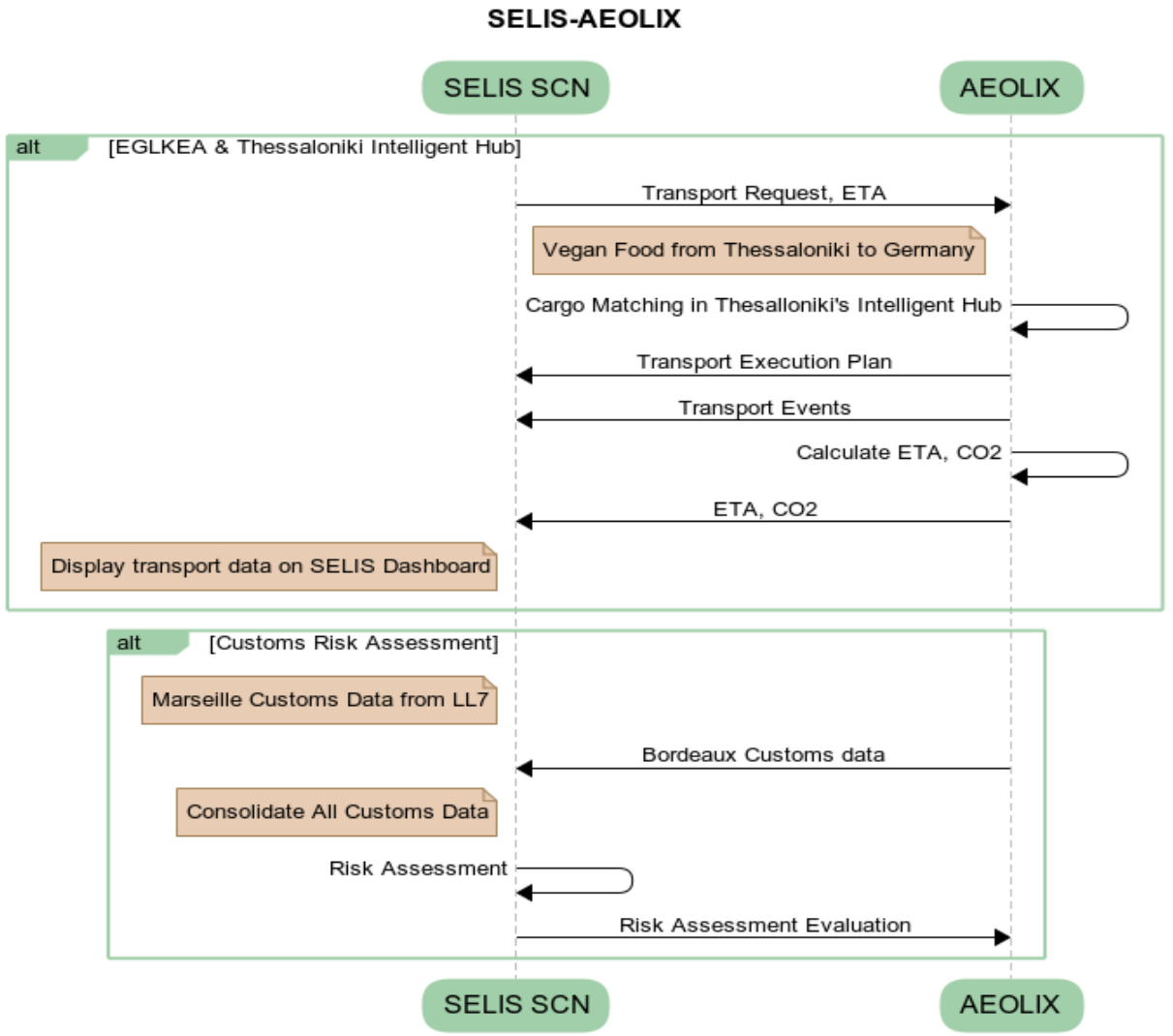

Route planning


Data management


What else?

Beyond AEOLIX & SELIS: federative network of platforms DTLF SG2

Connect AEOLIX-SELIS



Why FENIX?

FENIX - A European Federated Network of Information exchange in Future Logistics-

based on the work and recommendation of the Digital Transport and Logistic Forum (DTLF) sub-group 2 (corridor information systems) to create a viable and valid *federative network of platforms* as enabler for *Business to Administration* (B2A) and *Business to Business* (B2B) data exchange and sharing by transport and logistics operators.

FENIX NETWORK

OVERVIEW

Overall project overview:

- aims to interconnect the different digital platforms and harmonise the services they offer
- interoperability: common protocols for supporting data sharing services
- data sharing in the form of digital corridor information systems serving the European logistics community
- cloud-based will facilitate horizontal collaboration within the LSC
- overcome today's fragmentation and lack of connectivity around ICT-based systems for logistics decision making
- open-solution and not "privately owned" and technological neutral

FENIX NETWORK

OBJECTIVES

Main project objectives:

- establish a federated network of transport and logistics actors across Europe, enabling sharing of information and services needed to optimise TEN-T (A2&A3)
- demonstrate the operational feasibility and benefits through the organised national pilots –focus on testing the achieved interoperability capabilities (A4)
- Set up the EU corridor community building programme and to promote the benefits to the participants in terms of reduced costs and GHG emissions (A5&A6)

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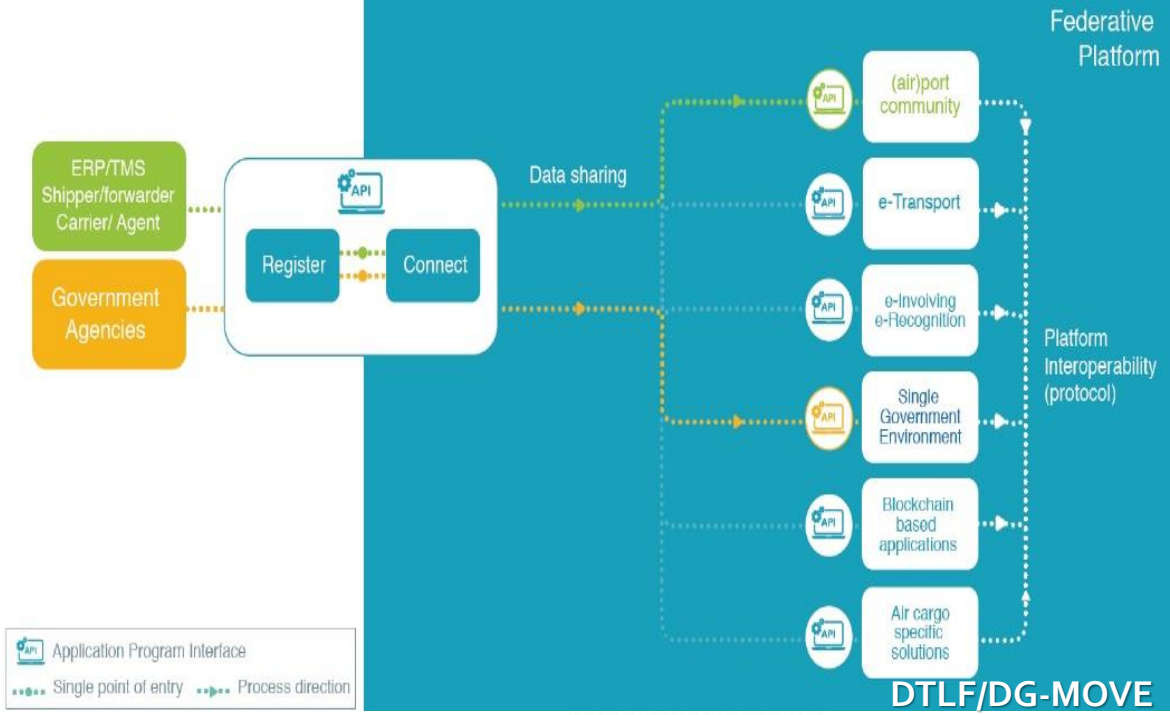
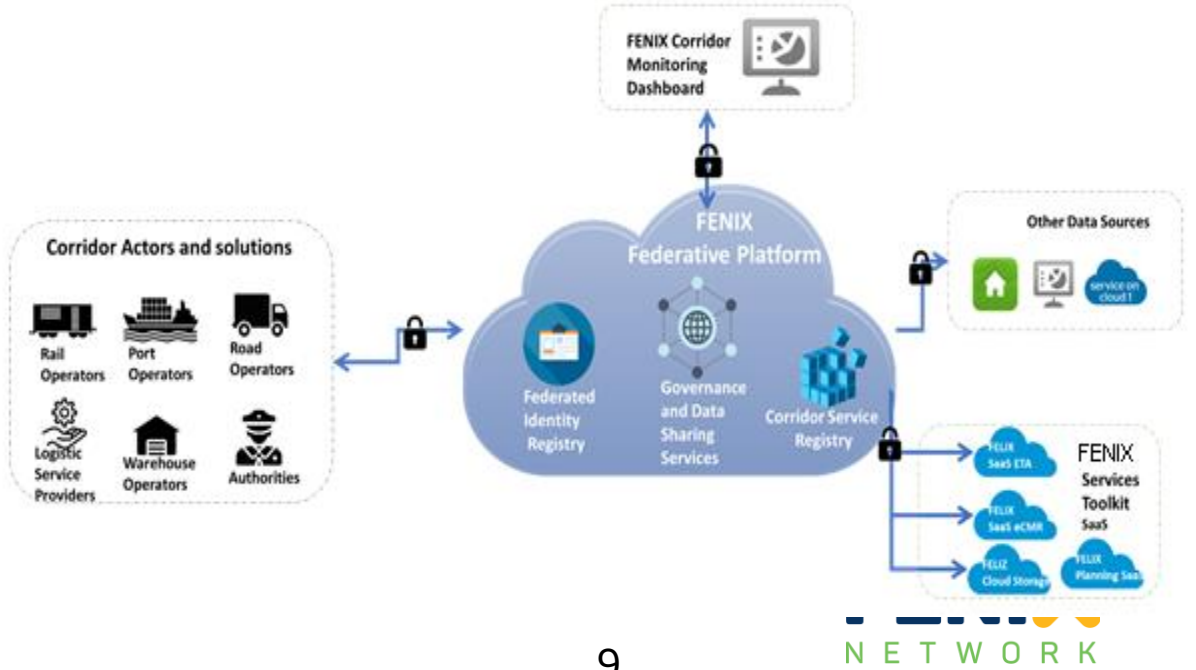
ARCHITECTURE

- based on Digital Transport and Logistics Forum (DTLF) work on corridor information systems
- aim to create a federative network of platforms for Business to Administration (B2A) and Business to Business (B2B) data exchange and sharing among transport and logistics operators across all TEN-T corridors: future of logistics



- FENIX will use as the first building blocks AEOLIX, SELIS analytics platforms and other platforms, data sources & services and will develop 3 pillars:

1) FENIX Federated Identity Registry
2) FENIX Governance & Data Sharing Federated Services
3) FENIX Corridor Service Registry



AT GLANCE

Test site Austria: Customs corridor -Fürnitz (South Austria) on the Baltic-Adriatic corridor
Test Site Belgium: PS BE 1- AirCcargo (Be)
PS BE2- Multimodal inland Hub-Procter & Gamble-Mechelen-Willebroek (Be)
Test site France: French Mediteranean – North Sea
Test Site Germany: Multiple test sites across on Rhine-Alpine in Holland, Germany, Switzerland, Italy
Test site Greece: Greece Balkan-TEN-T network, Adriatic-Ionian corridor-Cyprus multimodal
Test Site Holland (South Holland): Smart multimodal
Test Site Italy: PS IT1- Mediterranean and Baltic-Adriatic and the Motorway of the Sea of South-east - Trieste
PS IT2: The Italian Rhine Alpine – Dynamic Synchromodal Logistic
Test Site Slovakia: All TEN-T corridors and multimodal
Test site Spain: The Spanish-Atlantic Corridor

- ***Multi/syncromodal Transport***
- ***Intelligent bubs***
- ***Network Optimisation***

ACTIVITIES

- A1: Project management =8 milestones
- A2: Strategic dialogue, cross-corridors collaboration and pilot roll out preparation=15
- A3: Technology integration=13 milestones
- A4: Pilots roll out=22 milestones
- A5: Evaluation=19 milestones
- A6: Working groups, recommendations and best practices share=24 milestones

=6 activities/101 milestones
for:

- Pilot sites 11: AT, BE, FR, DE, GR, IT, NL, SP, SK
- 3 years: 1st April 2019-31st March 2022
- 36months
- 60.6MEuro
- 43 partners, 25 implementation bodies

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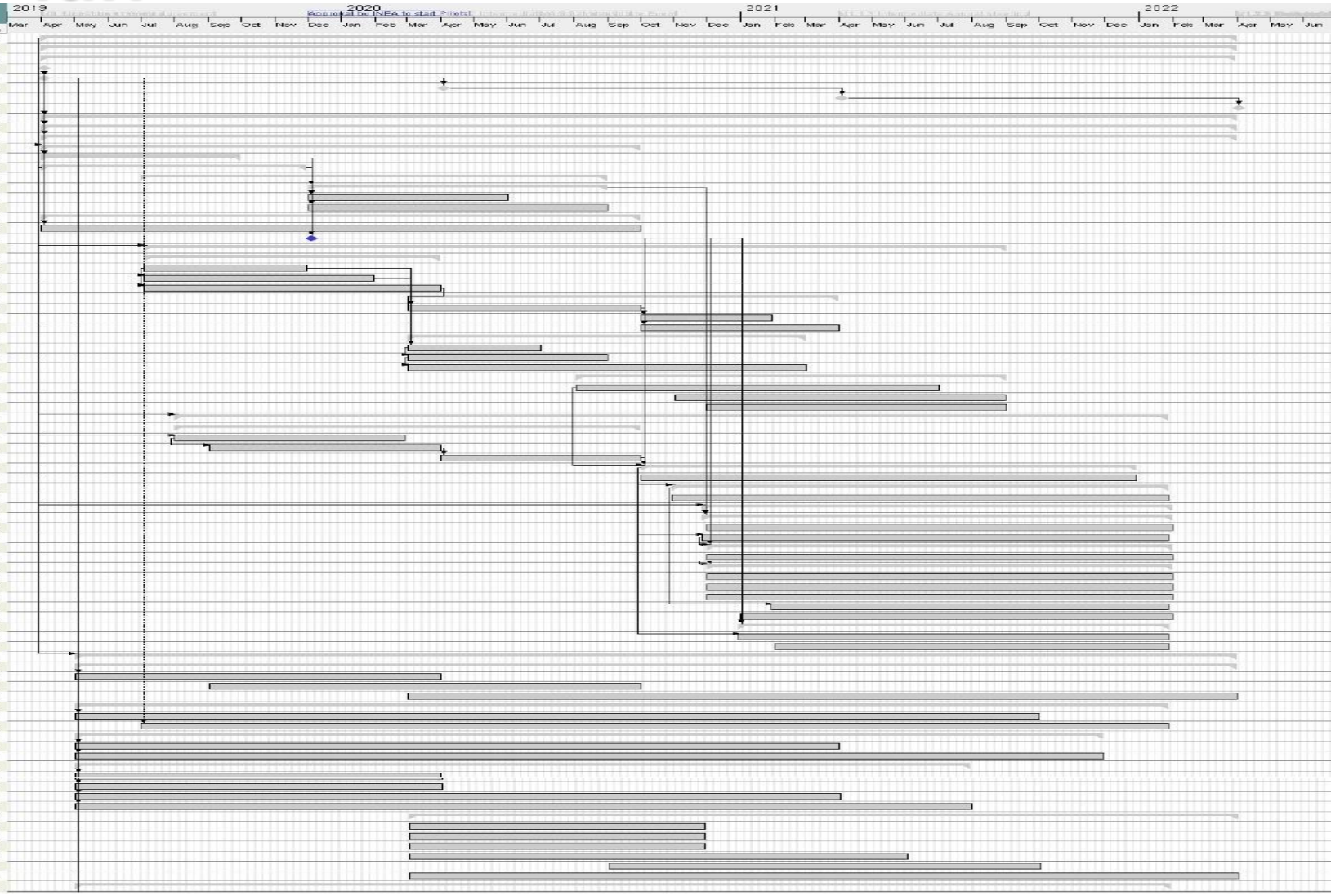
FENIX Working Plan

Name	Begin date	End date
1. Activity 1 Project Management activities	01/04/19	31/03/22
1.1 Supervision by Member States	01/04/19	31/03/22
Milestones	01/04/19	30/03/22
M0 Signature of Grant Agreement	01/04/19	01/04/19
M1.1.1 Kick-off meeting	01/04/19	01/04/19
M1.1.2 Intermediate Annual Meeting	01/04/20	01/04/20
M1.1.3 Intermediate Annual Meeting	01/04/21	01/04/21
M1.1.4 Final Meeting	31/03/22	31/03/22
Tasks T1.1 (1 - 5)	01/04/19	31/03/22
1.2 Project Management	01/04/19	31/03/22
1.3 Advisory Board	01/04/19	31/03/22
2. Activity 2 Strategic dialogue, cross-corridors collaboration and pilot roll out preparation	01/04/19	30/09/20
2.1 High level specifications for T&L corridor information systems services	01/04/19	30/09/19
2.2 Common requirements for the federated architecture of platforms	01/04/19	29/11/19
2.3 Definition of the validation process to support overall interoperability across the TEN-T corridors	01/07/19	31/08/20
2.4 Performance & interoperability specifications	02/12/19	31/08/20
T2.4.1 Roles and responsibilities regarding evaluation and interoperability	02/12/19	01/06/20
T2.4.2 Performance and evaluation criteria determination	02/12/19	31/08/20
2.5 Governance model for collaboration	01/04/19	30/09/20
T2.5.1 Governance model	01/04/19	30/09/20
T2.5.2 Governance structure	02/12/19	02/12/19
T2.5.3 Interoperability of data	04/07/19	01/09/21
Approval by INEA to start Pilots	04/07/19	31/03/20
3. Activity 3 Technology integration	04/07/19	29/11/19
3.1 Architecture for data sharing platforms	04/07/19	30/01/20
T3.1.1 Produce Initial Architecture	04/07/19	31/03/20
T3.1.2 Test applicability of architecture with all platform providers & pot. refinement	02/03/20	31/03/21
T3.1.3 Architecture release & documentation	02/03/20	01/10/20
3.2 Build the Federated infrastructure	02/10/20	29/01/21
T3.2.1 Initial FENIX federation infrastructure	02/10/20	31/03/21
T3.2.2 Testing with selected Pilot Site Use Cases and perform refinements	02/03/20	01/03/21
T3.2.3 Release for Pilot Site Solution development	02/03/20	01/07/20
3.3 Services & Applications	02/05/20	31/08/20
T3.3.1 Transport & Logistics Planning Services Suite	02/03/20	01/03/21
T3.3.2 Transport & Logistics Planning & Execution Mgt as a Service	03/08/20	01/09/21
T3.3.3 Orchestration Tools for Corridor Management Solutions	03/08/20	01/07/21
3.4 Integration & Verification	02/11/20	31/08/21
T3.4.1 Support pre-deployment of FENIX infrastructure in Pilot Site environments	01/12/20	01/09/21
T3.4.2 Monitor validation processes & analyse feedback	01/08/19	27/01/22
T3.4.3 Perform refinements	01/08/19	30/09/20
4. Activity 4 Pilot rollouts	01/05/19	27/09/20
4.1 Pilot operation framework and KPI guiding pilot operations in light of evaluation / impa	02/05/19	31/03/20
T4.1.1 Establishing Collaborative Business Environment	01/04/20	30/09/20
T4.1.2 Connectivity Gap Analysis	02/10/20	29/12/21
T4.1.3 Logistics Business Needs & Data Identification	02/10/20	29/12/21
4.2 Operation at different test sites	30/10/20	27/01/22
T4.2 Implementation at Pilot Sites	30/10/20	27/01/22
4.3 Cross site tests	27/11/20	31/01/22
T4.3 Cross Site Tests at Pilot Sites	27/11/20	31/01/22
5. Activity 5 Evaluation	01/12/20	31/01/22
5.1 Evaluation framework	27/11/20	27/01/22
T5.1.1 Evaluation framework of the federated platforms	01/12/20	31/01/22
T5.1.2 Evaluation of the Pilot sites	01/12/20	31/01/22
5.2 Technical & operational evaluation (KPIs included)	01/12/20	31/01/22
T5.2.1 Evaluate readiness of technologies and T&L services	01/12/20	31/01/22
T5.2.2 Evaluate readiness of technologies and infrastructure of Pilot Sites	01/12/20	31/01/22
T5.2.3 Assess technical performances of T&L corridor information services	01/12/20	31/01/22
T5.2.4 Evaluate cross pilot sites tests	29/01/21	27/01/22
5.3 Cost-effectiveness analysis	01/01/21	31/01/22
5.4 Experience and impact assessment	30/12/20	28/01/22
T5.4.1 Impact assessment of the federated platforms	30/12/20	27/01/22
T5.4.2 Business Paradigm Shift Analysis	01/02/21	28/01/22
6. Activity 6 Working Group recommendations and best practices share	02/05/19	31/03/22
6.1 Best Practices of future pan-European federated architecture	02/05/19	31/03/22
6.1.1 FENIX service quality indicators	02/05/19	31/03/20
6.1.2 Procedures for self-certification	02/09/19	01/10/20
6.1.3 Business model for service certifier	02/03/20	31/03/22
6.2 Enhanced traffic management in T&L corridor information system services	02/05/19	27/01/22
6.2.1 Design cooperative enhanced traffic management measures	02/05/19	01/10/21
6.2.2 Deployment of traffic management use cases	01/02/19	27/01/22
6.3 Security and data protection	02/05/19	29/11/21
6.3.1 Security requirements at all layers	02/05/19	31/03/21
6.3.2 Assure how will be implemented a durable security	02/05/19	29/11/21
6.4 Recommendations on regulation and policy	02/05/19	30/07/21
6.4.1 Inter-modal use of data	02/05/19	31/03/20
6.4.2 Multi-modal transport digital systems and market regulation	02/05/19	31/03/20
6.4.3 Responsibility and liability allocation in multi-modal transport digital systems	02/05/19	31/03/21
6.4.4 Data processing in multi-modal transport digital systems	02/05/19	30/07/21
6.5 Standardization and interoperability	02/03/20	31/03/22
6.5.1 Identification of relevant standards for multi-modal supply chains	02/03/20	27/11/20
6.5.2 Defining requirements for integration of standards in corridor information systems	02/03/20	27/11/20
6.5.3 Ensuring standard based communication between stakeholders	02/03/20	27/11/20
6.5.4 Demonstrating the usage of standards in best practices	02/03/20	01/06/21
6.5.5 Transfer of results in market-oriented international standardisation activities	01/09/20	01/10/21
6.5.6 Collaboration with other standardisation organisations (ISO CEN)	02/03/20	31/03/22
6.6 Financing and revenue model	02/05/19	28/01/22



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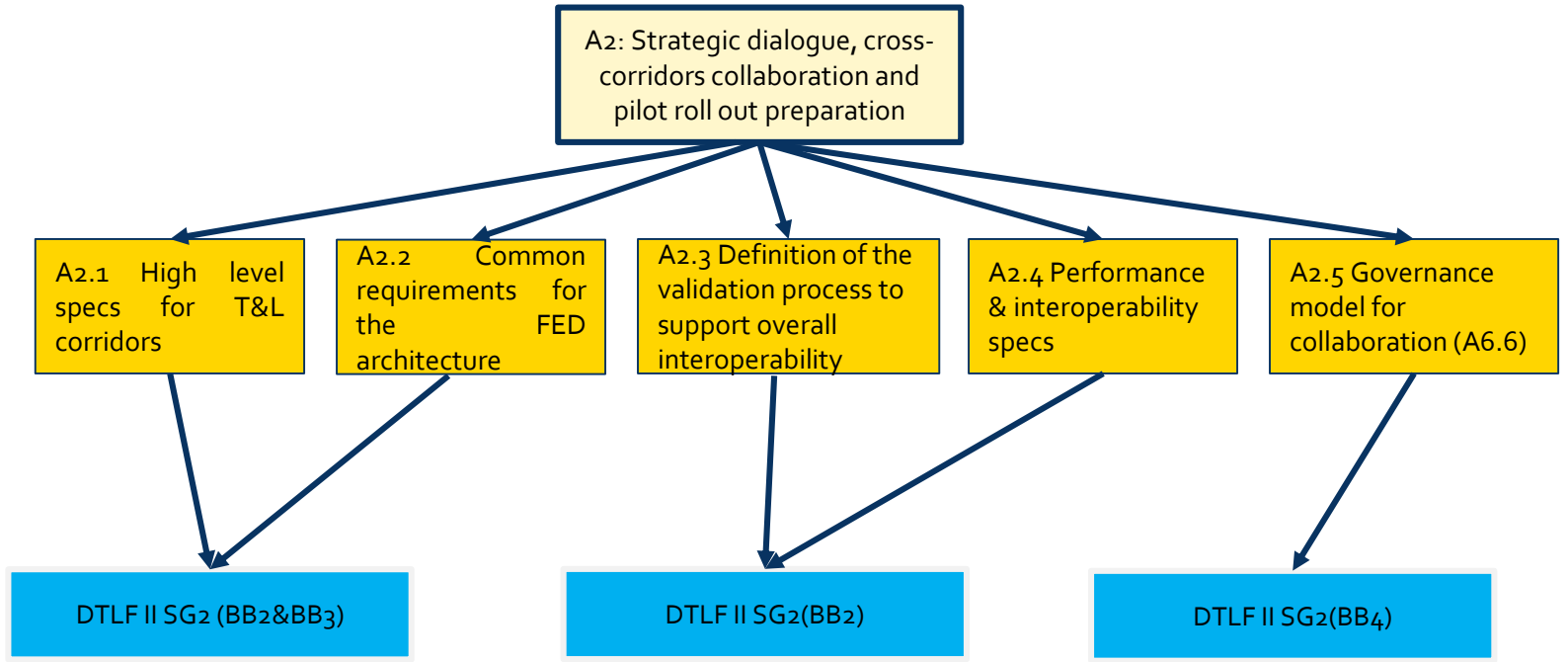
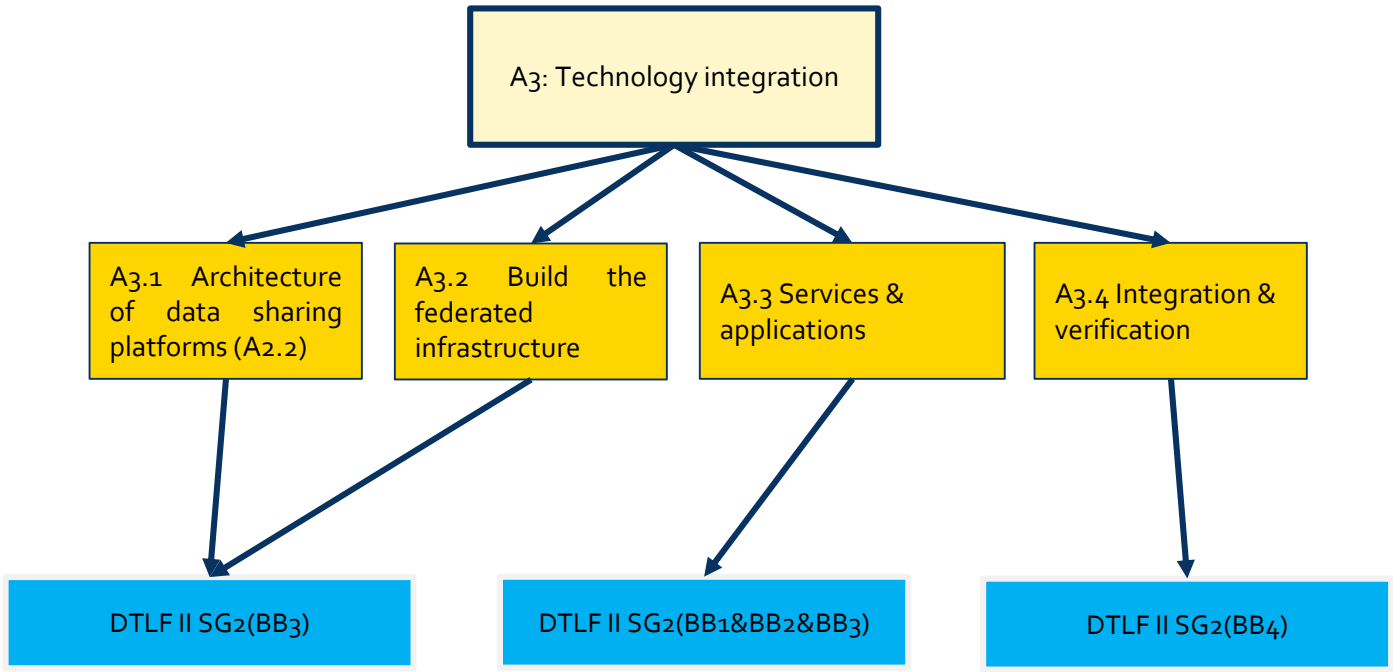
FENIX (A2)→DLTFII SG2

Activity 2: M1-M18



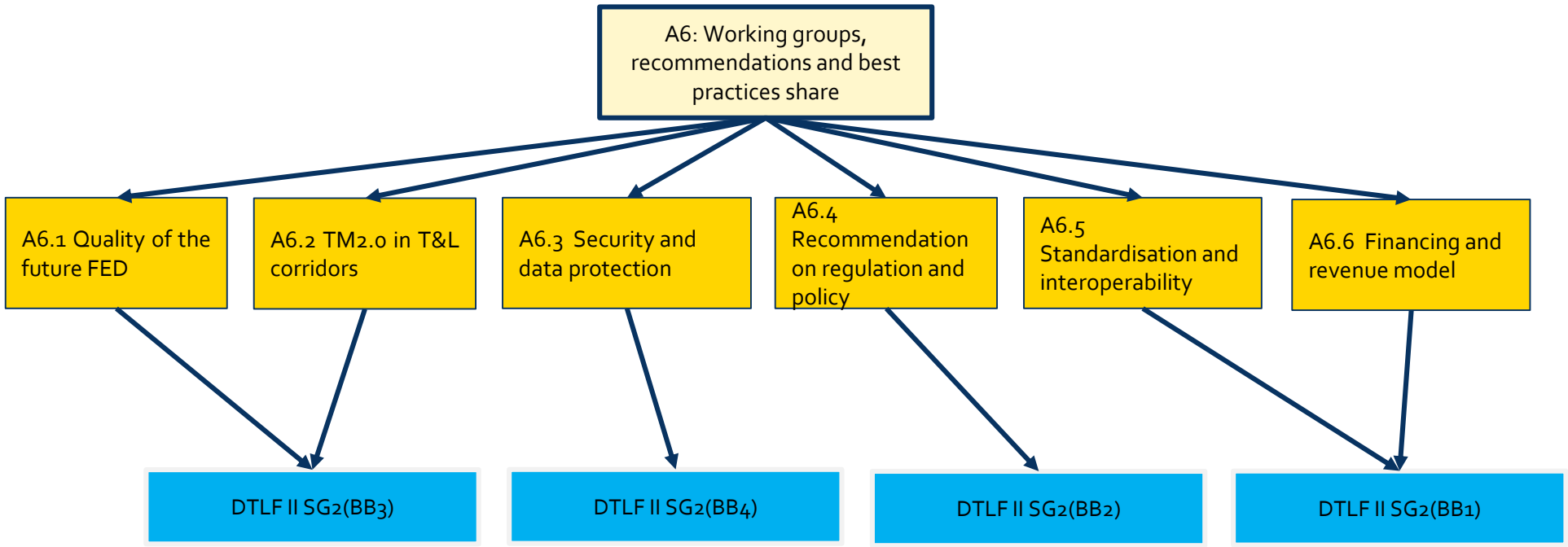
FENIX (A3)→DLTFII SG2

Activity 3: M1-M12-M24



FENIX (A6)→DLTFII SG2

Activity 6: M1-M12-M18-M24-M36



FENIX-DLTFII SG2 → future of logistics

- ***TRUST*:** Trust is the basis of the FENIX. To use the data, the data consumer must fully accept the data owner's usage policy.
- ***ECOSYSTEM OF DATA*:** pursues the idea of decentralization of data storage, which means that data physically remains with the respective data owner until it is transferred to a trusted party.
- ***STANDARDIZED INTEROPERABILITY*:** is implemented in different variants and can be acquired from different vendors.
- ***VALUE ADDING APPS*:** includes also services for data processing, data format alignment, and data exchange protocols.
- ***DATA MARKETS*:** FENIX enables the creation of novel, data-driven services that make use of data apps.
- ***PI*:** FENIX enables the creation of new ICT infrastructure to support operations in future PI logistics networks

FENIX NETWORK

Thank you for your attention!

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