

Preamble

The European Directorate for the Quality of Medicines and HealthCare (EDQM) is an inter-governmental organisation and a directorate of the Council of Europe (CoE) that has, as one of its missions, ensuring the quality of medicines and healthcare. The increasing risk of falsified medical products has led the CoE and the EDQM to develop a comprehensive anti-counterfeiting strategy to protect public health. The answers provided to this consultation reflect the EDQM's expertise in the field, but also the feedback gathered from various workshops organised by EDQM and attended by 114 representatives from all categories of stakeholders including authorities from 15 EU Member States.

A. CONSULTATION TOPIC n°1: CHARACTERISTICS AND TECHNICAL SPECIFICATIONS OF THE UNIQUE IDENTIFIER

In terms of characteristics and technical specifications, the following policy options can be pursued.

1. Policy option n°1/1: Leaving the choice of the technical specification to the individual manufacturer

Under this policy option, the delegated act would create a broad framework, leaving it up to the manufacturer to choose the appropriate technical solution for the serialisation number and its carrier.

2. Policy option n°1/2: Harmonisation through regulation

Under this policy option, the Commission would set out in the delegated act details concerning the serialisation number (see point 2.1) and the carrier (see point 2.2).

Consultation item n°1: Please comment on points 1 and 2 (policy options n°1/1 and n°1/2). Where do you see the benefits and disadvantages of each policy option?

EDQM answer:

The EDQM is strongly in favour of a harmonised approach, namely policy option n°1/2, for the unique pack identifier in Europe for the sake of cost and practicality. Multiple systems must not co-exist within the same country to avoid business stakeholders, and in particular pharmacies, having to handle, for example, different barcode formats with different readers. Even in a scenario where all packs bore a 2D barcode, but with differing coding symbology (product number, serial number, *etc.*), additional costs for extra readers and for the development of specific interfaces between readers and operating systems would be incurred.

The only advantage of Option n°1/1 would be to allow manufacturers to proceed with launching their own serialisation systems without waiting for harmonising regulations. Large manufacturing companies are already technically ready for this step and have delayed implementation while waiting for a clarified regulatory environment. However, in any case, they would have to wait for definitive confirmation of the absence of regulatory requirements before deploying their own serialisation system. Thus, the advantage would be limited and greatly offset by the enormous difficulties created by the afore-mentioned constraints.

Absence of regulation would lead to separate national or regional systems. Incurred costs will be much higher if different standards are used for the different national systems. See below answer to consultation item n°8.

Thus, the most cost-effective solution is policy option n°1/2, with harmonisation through regulation of the requirements for serialisation numbers and carriers. The level of detail provided should allow for flexibility in order to take into account national/regional specificities, *e.g.* for product numbering, but should impose a comprehensive framework for consistent product coding.

2.1. Regulation of the composition of the serialisation number

2.1.1. Manufacturer product code and pack number

In order to allow identification of a pack of medicinal products, a serialisation number would have to contain, as a minimum, a manufacturer product code and the pack number.

For the purpose of this public consultation, based on existing international industry standards and global regulatory developments, the following composition of the unique identifier is proposed:

Manufacturer Product code (which includes the prefix of the country)	Unique identification number of the pack
XXXXXXXXXXXXXXXX	XXXXXXXXXX

Consultation item n°2: Where do you see the advantages and disadvantages of the approach set out in point 2.1.1.? Please comment.

EDQM answer:

The EDQM is in full agreement with the proposed approach. It is expected that wide consensus on this topic currently exists, based on feedback from our own exchanges with authorities and stakeholders. However, some questions remain:

- which manufacturer product code to use? The EDQM proposes to use a neutral product code, agreed by the authorities responsible for Marketing Authorisations in each country. This code could be in the form of the GS1 Global Trade Item Number (GTIN), provided that in the respective countries there is an agreement with the responsible authorities that all marketed products are given such a product code. This implies that all Marketing Authorisation Holders registering to GS1 would require a Global Company Prefix (GCP) to be part of their GTIN. This has significant cost implications, since the registration fee for GS1 could represent an additional cost on top of all the other system costs (databases, maintenance, storage, hardware, *etc.*). Furthermore, governance of the GS1 coding system lies with private stakeholders, since the public organisation members of GS1 have no voting rights in decision-making processes.
- another approach is that the Manufacturer Product Code becomes a national product code following the GS1 symbology, with a GCP that is identical for all products registered in the country, no matter who are the Marketing Authorisation Holders (MAH). In this way, all the individual MAH would not have to pay the GS1 registration fee, *e.g.* like currently in France.

- a more neutral approach could be to use ISO standards, which are overarching standards, *e.g.* of GS1 or IFA's PPN. For example, a Data Matrix Code could be used according to ISO/IEC 16022 with a data structure and syntax conforming to ISO/IEC 15434 and ISO/IEC 15418. The ISO 15418 standard (Data Identifier and Application Identifier Standard) allows other standardisation bodies (Issuing Agencies) to establish their own product coding standard, provided that it is compatible with the ISO standard.

Overall, the EDQM is in favour of requirements that allow the flexibility to use a system based on a global ISO standard, which includes any inter-operable coding standards, including GS1 standards.

2.1.2. Additional product information

The serialisation number allows for inclusion of a range of other product related information.

(a) Batch number

The serialisation number could include the batch number of the medicinal product. If the serialisation number is machine-readable (see point 2.2), this would facilitate identification of batches. This may be relevant in view of the obligation of the wholesale distributor to keep records of the batch number in accordance with the fourth indent of Article 80(e) of Directive 2001/83/EC. It may also facilitate recalls on a batch-level in the distribution chain.

(b) Expiry date

The serialisation number could include the expiry date. This may facilitate storage management and verification of expiry dates of medicinal products at the level of wholesale distributors and pharmacists/retailers.

Consultation item n°3: Where do you see the advantages and disadvantages of the approach set out in points (a) and (b) of point 2.1.2? Please comment.

EDQM answer:

The advantages of the above approach is that the authorities or business stakeholders of the supply-chain will have unlimited access to batch numbers and expiry dates by scanning the identifiers. In cases where live access to the web-service is unavailable, physical coding of the batch number and expiry date will allow local systems, such as Pharmacy Management System software, to capture the information for stock management and to determine pack expiry dates.

The other advantage is that by adding a batch number and expiry date, the serialisation number becomes more complex, making it more difficult for counterfeiters to copy it and ensuring its uniqueness.

The only disadvantage of this approach is the resulting increase in the size of the barcode needed to display the information, which could be an issue for some small package sizes. Should this option be pursued, the offline availability of the information on batch number and expiry date should not be considered an incentive to accept low levels of online data availability. The cost-effectiveness of such systems can only be assessed based on high levels of data availability. However, risks of network failure remain that are independent of service availability. From the feedback we have received from our own consultation process, the vast majority of business stakeholders have expressed a clear need to have the information about batch number and expiry date in the code itself in order to facilitate and secure batch

traceability and the handling of expired or almost expired products. Therefore, the EDQM is in favour of both approaches described in 2.1.2 (a) and (b), *i.e.* to have both batch number and expiry date included in the serialisation number.

(c) National reimbursement number

25. Directive 2011/62/EU lays down exhaustive rules on labelling for medicinal products as regards authenticity and identification.¹⁷ Member States are not allowed to create additional requirements in this respect.

26. In addition, Directive 2011/62/EU provides that Member States may, *inter alia* for the purposes of reimbursement, extend the scope of application of the unique identifier to include any medicinal product that is subject to prescription or to reimbursement.¹⁸

27. Most Member States have national product codes for reimbursement purposes in place ('national reimbursement number'). Therefore, two alternative options could be considered:

28. Option 1: the national reimbursement number is replaced by the abovementioned serialisation number.

29. Option 2: The abovementioned serialisation number includes the national reimbursement number. In this case, the serialisation number could be composed as follows:

Manufacturer Product code (which includes the prefix of the country)	Unique identification number of the pack	National reimbursement number (see point c)	Expiry date (see point b)	Batch number (see point a)
XXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXX	XXXXX

Consultation item n°4: Which of the two options set out under point (c) of point 2.1.2 is in your view preferable? Where do you see advantages and disadvantages? Please comment.

EDQM answer:

The EDQM prefers Option 2. The advantage of this option is that it gives maximum flexibility in adapting a pan-European unique system, or a network of interfaced systems, to national environments, without requiring countries to adapt their reimbursement system. Authorities from EU Member States have put in place systems for the electronic handling of reimbursement because of needs, requirements and constraints linked to their own national environments. These needs, requirements and constraints will remain, no matter what changes are made to prevent counterfeiting.

Another advantage is that it facilitates maximum flexibility in moving progressively to single identifier reading for both anti-counterfeiting and reimbursement purposes, as proposed by the Directive in Article 54a(5). This would be an obvious benefit in terms of equipping pharmacies for capturing both price and reimbursement information.

In option 1, where an existing national number could be embedded into a standardised product code (see above consultation item n°3), the option is technically feasible (see proposal for managing a national coding system in Germany, www.ifa-coding-system.org¹), allowing implementation of mass serialisation without dramatically changing the system for handling price and reimbursement information by Pharmacy Management Systems.

The disadvantages of Option 2 are:

- a further increase in the size of the complete serialisation number to be coded on the pack (see above comments regarding batch number and expiry date).
- a missed opportunity to harmonise all medicine product numbering systems in the EU. However, the ideal business scenario of a unique product numbering system should be balanced by national needs, requirements and constraints linked to the different national environments and the ultimate sovereignty of EU Member States in this matter.

Overall, the EDQM is of the opinion that the advantages of Option 2 outweigh its disadvantages, mainly in terms of the flexibility of implementing the new requirements.

2.2. Regulation of the technical characteristics of the carrier

30. Various ways to carry the serialisation number on the outer packaging could be considered:

2.2.1. Linear barcode

31. This carrier is widely used for all industrial and consumer goods.

32. It is used currently in Belgium, Greece and Italy as a carrier for the serialisation number of medicinal products. Linear barcode readers are now present in almost every pharmacy in Europe.

33. There may be difficulties with regard to the amount of information that needs to be stored in this code (see point 2.1). This applies in particular in the case of small outer packagings.

2.2.2. 2D-Barcode

34. This carrier is being used increasingly for industrial and consumer goods.

35. This carrier is able to carry a large number of data on a small label. However, many pharmacies in Europe are not currently equipped with a suitable reader to read a 2D barcode.

2.2.3. Radio-frequency identification (RFID)

36. RFID uses radio waves to exchange data between a reader and an electronic tag attached to an object.

37. RFID has been discussed in the context of the identification of pharmaceuticals. However, at present, it is relatively expensive in comparison with other carriers. Moreover, little is known about how the RFID technology may interfere with the quality of certain medicines.

¹ http://www.ifa-coding-system.org/downloads/en/PPN_Code_Spezifikation_lang_engl_V1_01.pdf

Consultation item n°5: Please comment on the three concepts described under point 2.2. Where do you see the benefits and disadvantages of each of the three concepts. What are the costs for each concept? Please quantify your reply, wherever possible, by listing for example:

- costs for reading devices for the different carriers;

- costs for adapting packaging lines of medicines packaged for the EU market.

EDQM answer:

As correctly stated under point 33, the concept of a linear barcode is not adapted to the technical requirements for:

- also coding for batch number, expiry date and national reimbursement number.
- having a serialisation number that is sufficiently long to prevent illicit generation of such numbers by chance.

The only theoretical advantage of retaining linear barcodes would be that business stakeholders in the supply-chain would not need to change from 1D barcode readers. However, even if 1D barcodes were retained and incorporated the new additional requirements, it would be likely that stakeholders would have to at least change the software embedded in the readers and, frequently, would need to upgrade the readers, so the advantage would be negated.

The advantages of using an RFID system are huge from a strictly technical viewpoint. This has been demonstrated by the EC-funded Bridge project (www.bridge-project.eu), run by a consortium, to implement and pilot a fully operational drug product tracking system for entire supply-chain data collection using a 2D Datamatrix on all levels of product packaging (item, bundle, case, pallet and vehicle), and RFID tags (hybrid labels with printed bar codes) for cases and pallets. The use of inter-operable RFID and printed barcode carriers in this project demonstrated how such a practical system can function successfully in the real world. The main advantage of RFID lies with the much easier handling of aggregation, *i.e.* the different levels of product packaging used in the supply-chain that makes systematic reading of item-level 2D barcodes almost impossible, without dramatically slowing down (and thus endangering) the business processes of wholesale distributors.

However, some technical issues remain, in particular for metallic packaging materials (*e.g.* powder sachets or aluminium blister packs) that interfere with RFID tags and large pallets for which the readability rate for the individual packages they contain can be lower than 100%. The robustness of the accessibility of the data encoded in tags could also be a technical issue. Some of these technical issues could be solved by increasing the size of the tags; although this would still cause a problem for small-sized packages. However, the main disadvantage of RFID is the cost issue, as raised in point 37:

- RFID tags add significant costs (€0.10 to €0.15 per tag) on top of serialisation costs (see below). The cost of RFID tag readers (up to €3,000) is higher than for 2D barcode readers (around 200 €). There are significant integration costs in addition to tags and readers in order to switch from 2D barcodes to RFID tags, even if the same item coding and standards are retained. However, these extra RFID costs could be reduced by, for example, only handling aggregation information at the bundle, case or pallet level. In this way, the extra costs could be offset by a return on investment from higher supply-chain efficiencies and benefits from better inventory management. Easier reading of serialisation numbers, coupled with the other opportunities opened up by

system implementation will incentivise a much higher reading/verification rate and the capture of logistical events by wholesale distributors.

Given the above considerations, estimating the implementation costs for RFID is extremely difficult since, even in the case of the USA where systematic capture of pedigree information will be mandatory, forecasting costs depend on numerous uncontrolled factors such as the linearity of cost upscaling from individual costs, which depend on the size of the different actors in the supply chain. Therefore, an overall project costing (which should be the only valid one to consider) is extremely difficult in the European context, given the desire for flexibility in the scale RFID-tagging ideally mixed with item-level implementation of 2D barcodes.

In the opinion of the EDQM, 2D barcodes represent the most favourable approach at present. This is the most mature data carrier in terms of reliability and affordability, especially at item level (packs of medicines). Suppliers of materials (printers, readers, integrated packaging lines, *etc.*) have greater experience in implementing 2D-based solutions and, therefore, already have a set of well-established technical specifications and standards that are largely validated through use, *e.g.* for printing quality and readability rate. There are no technical challenges for ensuring readability rates close to 100%. Implementation costs lie in:

- setting up and maintaining the repository(ies), storing the items and transactions data. This cost is hugely variable (by factors of 6 to 20); although it can be limited to less than €0.01 per pack of medicine, as observed for the public-governed systems implemented in Italy and more recently in Turkey.
- the cost of 2D readers (€200 approx.), which even business stakeholders already equipped with 1D barcode readers would need to purchase.
- the cost for upgrading packaging lines and interfacing with the Enterprise Resource Planning (ERP) and Manufacturing Execution Systems (MES) of manufacturers. This cost again depends on numerous factors, such as the level of market specialisation of the packaging line (serving one single country or several ones with different requirements) and the level of automation of printers and cameras. This cost could be estimated as ranging from €60,000 to €200,000 for each packaging line. Adding aggregation functionality could multiply this cost by a factor of up to 3, based on experience from implementation of the Turkish ITS/PTS complete track-and-trace system. The number of packaging lines to be considered in costing should take into account lines already upgraded (*e.g.*: batch traceability with CIP-13 in France and the full ITS/PTS traceability system in Turkey). Thus, the overall cost estimate cannot be calculated merely by multiplying the above figures by the overall number of packaging lines.

It should be borne in mind that the figures presented here could be obsolete by the time any system is implemented. The cost of barcode readers could dramatically decrease in future, since basic mobile phones are already often equipped with simple 2D barcode readers.

Should the state-of-the-art 2D barcode emerge as the preferred data carrier, the EDQM feels that it will be important to facilitate implementation of RFID tagging in a phased manner as the technology matures, especially to allow more efficient handling of aggregation and better returns on investment for business stakeholders. In terms of setting up and maintaining a database, there is no difference in cost between a 2D barcode and RFID system, the costs would lie only in equipping all stakeholders (except smaller community pharmacies) with RFID portals.

B. CONSULTATION TOPIC N° 2 - MODALITIES FOR VERIFYING THE SAFETY FEATURES

38. The concept of a unique identifier to verify the authenticity of medicinal products only works if there is a reliable verification system in place. It is easy to reproduce a (randomised) serialisation number *per se*. Therefore, the security of a serialisation number is based on the fact that a (randomised) serialisation number is checked into a repositories system, and subsequently 'checked out' of this repositories system (see consultation topic n°3).

39. If the repositories system does not contain this number (because it was never checked in or is already checked out) this highlights a security issue to be followed up.

40. Thus, the check-out of the safety feature is a key element in the process of ensuring the detection of falsified medicines in the supply chain and, by extension, the protection of public health.

41. In addition, there is the possibility to verify the serialisation number without a check-out of that number from the repositories system.

42. Thus for the purpose of this concept paper the following terminology shall be used:

'Verification of the serialisation number': checking the number against the entry in the repositories system, without checking out that number from the repositories system;

'Check out of the serialisation number': the number is verified and checked out of the repositories system.

43. Various actors in the supply chain may be involved in this verification or check-out. This includes in particular

re-packagers;

wholesale distributors; and

pharmacies/retailers.

44. Directive 2011/62/EU already includes an obligation for re-packagers (such as parallel traders) to verify the safety feature.

45. For other actors in the supply chain, the detailed procedures for verification are to be established in the delegated act following an impact assessment. The Commission is placed under an obligation, when establishing those modalities, to take into account the particular characteristics of the supply chain in Member States and the need to ensure that the impact of the verification measures on particular actors in the supply chain is proportionate.

1. Policy option n°2/1: Systematic check-out of the serialisation number at the dispensing point

46. In this option the pack is checked out following the reading (scanning) of the serialisation number at the end of the supply chain i.e. by a retailer or a pharmacy, including a hospital pharmacy. In this policy option, the wholesale distributor is not required to check out or verify the serialisation number.

47. This policy option ensures that any medicinal product with security/safety issues is detected before it is dispensed to the patient.

48. Under this policy option the authenticity of the medicinal product is verified at a late stage in the distribution chain. If the serialisation number is copied several times, and subsequently channelled into the distribution chain, packs with falsified medicines may circulate for months in the Union before they are detected.

49. In terms of costs, the following actors may have to be equipped with suitable reading systems:

Pharmacies, including hospital pharmacies; and

Retailers who dispense medicinal products which have to include the safety feature.

Consultation item n°6: Regarding point 1 (policy option n°2/1), are there other points of dispensation to be considered? How can these be addressed in this policy option?

EDQM answer:

It is understood that, in some countries, other healthcare professionals can dispense medicinal products under certain conditions. Even if the scale of this practice is limited, the same anti-counterfeiting measures should be taken. Given the huge cost involved in equipping all other healthcare professionals with readers, alternate solutions should be envisaged to record dispensing of medicines in the system, under these special circumstances.

2. Policy option n°2/2: As in policy option n°2/1, but with additional random verifications at the level of wholesale distributors

50. In this policy option, in addition to the systematic check out at the point of dispensation, wholesale distributors perform random verifications of the serialisation number.

51. In this case the serialisation number cannot be checked out by the wholesale distributor from the repositories system.

52. A verification of the serialisation number without check out provides only limited additional protection as it cannot always detect duplicates of the serialisation number.

53. On the other hand, it can be argued that, even if duplication of serialisation numbers cannot be always detected, this policy option is likely to be preventive and dissuasive, and therefore helps to protect against falsification of medicines in the distribution chain.

54. This policy option requires additional investments for wholesale distributors. It may delay the preparation of delivery orders.

3. Policy option n°2/3: As in policy option n°2/1, but with additional systematic verification by the wholesale distributors

55. In this policy option, in addition to the systematic check out at the point of dispensation, each actor in the supply chain (i.e. all wholesale distributors) has to verify the individual pack.

56. As in policy option n°2/2, the serialisation number would not be checked out by the wholesale distributor from the repositories system. Therefore, the weakness of the checks in the distribution chain as set out above (point 2) remains.

57. However, this policy option does ensure the traceability of each individual pack. To date, traceability is usually ensured by referring only to the name of the medicinal product and the batch. This policy option would thus facilitate the recall of medicines, including individual packs, at any stage of the distribution chain. This policy option may also make it easier to trace back the trade flow of falsified medicines.

58. However, this policy option involves major additional operational costs, in particular for wholesalers. The systematic scanning of each pack will delay the preparation of the orders and this increases the human resources needed for these operators.

Consultation item n°7: Please comment on the three policy options set out in points 1 to 3. Where do you see the benefits and disadvantages? Please comment on the costs of each of these policy options. Quantify your response, wherever possible.

This applies in particular to the:

- number of wholesale distribution plants;
- costs for adapting such plants;
- duration of scanning of the serialisation number;
- number of pharmacies, including hospital pharmacies;

- number of medicinal products dispensed by pharmacies and a hospital pharmacy.

Option 1 (“Systematic check-out of the serialisation number at the dispensing point”) has the advantage of easiest implementation since no aggregation is needed and none of the wholesale distribution plants would need to be adapted to be able to handle mass serialisation. Whatever final EU requirements and national/regional/EU schemes are decided on, this option will actually be the first implementation step for any system. Under this scenario, the costs incurred would include:

- for manufacturers, upgrading their packaging lines, getting equipped with readers, upgrading their Enterprise Resource Planning (ERP) systems for mass serialisation and for interfacing with the repository(ies) that handle the verification requests from pharmacists 24/7.
- for pharmacists, upgrading their Pharmacy Management System (PMS) software to interface it with the repository(ies) through which they make verification requests; the cost per system upgrade is estimated to be range from €50,000 to maximum €200,000, to be divided among the number of users. In a country like Belgium (10 million inhabitants) with 5,300 community pharmacies, 80% of which (4,240) use four different PMS providers, the total additional cost for upgrading these 4 PMS systems would range from €200,000 to €800,000, *i.e.* approximately €50 to maximum €200 per pharmacy, or lower if the cost of upgrading is absorbed by the PMS service providers. This estimate could be further fine-tuned by taking into account:
 - o the fragmentation in the market for PMS software.
 - o the wide variety of technical architectures amongst PMS providers.
 - o the particular cases of hospital, legal mail-order and Internet pharmacies.
 - o the level of automation of pharmacies, which impacts the business processes in the pharmacy and, hence, their workload if the PMS system is interfaced with the repository(ies).
- the total number of community pharmacies in the EU is estimated to be more than 160,000. Therefore, the overall one-off cost for a PMS upgrade and system interface could be estimated at $160,000 \times \text{€}50$ to $\text{€}200$, *equivalent to* €8 to €32 million. The costs of 2D barcode readers for each pharmacy also needs to be considered; assuming an average need for 2.5 scanners per pharmacy (plus one spare), the total cost would be $160,000 \times 3.5 \times \text{€}200 = \text{€}112$ million.
- there are 5000 hospital pharmacies in the EU. Assuming that the verification process is the same as for community pharmacies with no further verification via the repository(ies) system of the items within the hospital, *i.e.* in the wards beyond the hospital pharmacy, then the costs would be the same as for community pharmacies.
- in terms of the duration of scanning of the serialisation number, this factor depends on the physical handling of items, which is not significant for the individual packs handled by pharmacies (whereas pallets, cases and bundles are handled at the wholesale level) and on the time-lapse for getting a response from the repository(ies) once the item has been scanned. This latter factor is related to the design of the repository(ies). Regarding the response time for pharmacies, the target time-lapse should be significantly below 1 second. Achieving this target has cost implications, because of the need to scale the system so that this target response time can be met even during peak use. The overall impact can only be estimated based on the number of medicinal products dispensed by pharmacies (community/high street and hospital). For the entire EU, the volume of prescriptions per year is around 10 billion units for both retail and hospital pharmacies. Based on a scenario of no other verifications being made other than at the point of dispensing, there would be 32 million

verifications per business day over a period of 12 hours, with an estimated peak of 8 million transactions during 1 hour. With a rather small average size for web pages and verification events of 300 bytes, the EDQM estimate for cost per UMI (less than 0.01€) is valid for a system with servers sized to accommodate the above traffic. According to traffic reports, the current European public network is suitably sized in terms of bandwidth to carry over the transactions considering the small size of the messages.

For both Options 2 and 3, the costs at the level of wholesale distribution plants would be the same since distributors need to be fully equipped even if they only do random or risk-based verifications. Thus, there is no advantage in terms of cost-effectiveness in equipment costs under Option 2. The key difference in Option 3 (systematic verification by distributors) would be the need to have, at the level of manufacturers, systematic check-in and maintenance both pack and aggregation information (cases/bundles/pallets). This is so that systematic verification could be done at the distributor level by relying on aggregation information without needing to individually read pack information, which would be very time-consuming for distributors and would limit the speed of distribution that ought to be preserved. The alternative is to move from 2D barcodes to RFID tagging specifically at the distributor level, bearing in mind the constraints and limitations mentioned under Consultation Item N°5 above, or to increase human resource costs at the distributors level to cope with systematic 2D barcode reading while preserving the speed of distribution.

Systematic management of aggregation at the manufacturer level could triple the cost of upgrading packaging lines from €150,000 to €450,000. Even though numerous packaging lines already upgraded for serialisation AND aggregation for the Turkish market should also be taken into account when assessing the overall cost, it remains a significant extra cost.

Upgrading the WMS (Warehouse Management Systems) of wholesale distributors to interface with a serialisation verification system implies costs that are similar to manufacturers' costs for interfacing ERP and MES systems, and which are highly variable depending on the systems.

Overall, the EDQM prefers Option 2, with a phased implementation of verification at the wholesale distributor level. Cost-effective running of this option implies the development of mathematical tools for a sound sampling approach to risk-based (non-systematic) verification by distributors based on preceding verifications or information captured along the distribution chain of packs. By the time Option 2 has been robustly deployed, it is expected that technical tools will have progressed sufficiently to facilitate a possible further implementation of more systematic verification or event capture at the distributor level.

C. CONSULTATION TOPIC N°3 - PROVISIONS ON THE ESTABLISHMENT, MANAGEMENT AND ACCESSIBILITY OF THE REPOSITORIES SYSTEM

59. In order to verify the authenticity of the medicinal product, the serialisation number has to be checked against the information stored in a repositories system. The delegated act shall contain provisions on the establishment, management and accessibility of the repositories system, following an impact assessment.

60. Independently of the policy option chosen, the costs of the repositories system shall be borne by the manufacturing authorisation holders of medicinal products bearing the safety features.

1. Policy option n°3/1 – 'stakeholder governance'

61. Under this policy option the delegated act would define the objective to be achieved and the obligations on the relevant actors (manufacturers, wholesale distributors, pharmacists/retailers) and also set out the legal framework and limits (for example, the obligations to protect personal and commercial data). On the basis of these obligations, this policy option would leave it to the relevant actors to set up the appropriate infrastructure for the repositories system ('stakeholder governance').

62. Thus, the delegated act would define only the key responsibilities, such as:

The manufacturer would be responsible for ensuring *inter alia*:

– that the serialisation number is available for authenticity checks, while being secured against illegal infiltration (hacking);

– that the response from the repositories system is delivered without delay;

– that the serialisation number is checked out.

The person dispensing the medicinal product/wholesale distributor (see consultation topic n°3) would be responsible for ensuring *inter alia*

– that the serialisation number is verified (details depend on the choice made under consultation topic n°3);

– that data enabling the medicinal product to be traced to the final dispensing point are not made available to the manufacturer (see point 4.1 in this consultation topic).

63. This policy option may be the most cost-efficient as it may create a market that provides best value for money.

64. This policy option may make it more difficult for Member States to use the information contained in the repositories system for the purposes of reimbursement, pharmacovigilance or pharmacoepidemiology.

2. Policy option n°3/2 – EU governance

65. Policy option n°3/2 is a pan-European repositories system to which all actors are connected, and which is governed by an EU-body (Commission or EMA) ('EU governance').

66. This system would provide a single point to check serialisation numbers in and out. To that extent, it can simplify processes.

67. However, the complexity of the system may be considerable: It would require a central repositories system storing all data from all actors in the supply chain, the simultaneous connection of thousands of actors at the same time, and the instantaneous authentication of individual packs.

3. Policy option n°3/3 – national governance

68. This policy option is the establishment of a system of national repositories to which all actors in the Member State, and actors supplying medicines to the territory of that Member State, are connected. The national repositories would be governed by official national bodies, established by each Member State ('national governance').

69. The national databases would have to be interconnected in order to allow intra- Union trade.

70. The advantages of this policy options are that:

the number of actors linked to a national repositories system is limited. This might reduce the complexity of the system;

Member States can select the appropriate characteristics of the national repositories system in view of the national characteristics of the distribution chain.

71. However, the interconnection of systems run by national official bodies might present a challenge. Moreover, a manufacturer supplying medicines to various Member States would have to be connected to a multitude of national repositories.

Consultation item n°8: Please comment on the three policy options set out in points 1 to 3. Where do you see the benefits and disadvantages? Please comment on the costs of each of these policy options. Please quantify your reply, wherever possible. This applies in particular to the estimated one-off costs and running costs for a repositories system. Where possible, please provide information on past experiences with a repositories system at individual company level and at national level (taking into account the experiences of Member States and companies).

EDQM answer:

The key challenge for this consultation item is confidentiality of data. Several stakeholders (mainly large pharmaceutical companies) are used to running internal traceability systems with exchange of data between sites. All stakeholders are used to exchanging data with their direct business partners, *e.g.* with a manufacturer sending an Advance Shipping Notice to a wholesale distributor in an Electronic Data Interchange or xml format. The new factor to be taken into consideration here is the fact that, whatever the architecture of the system, it will store and handle data from stakeholders that have not pre-agreed to having that data stored at the same place or, at least, in the same system.

The EDQM opinion, described below, analyses the three options, but it should be borne in mind that a multitude of other potential architectures exist, some combining the three approaches proposed in the consultation.

A common feature of any architecture will be that all messages and data flows should be standardised, such as Electronic Product Code Information Systems (EPCIS)

Policy Option 1 (stakeholder governance):

- the advantages of this model lie in:
 - the direct link between the system administrators and most of the users, *i.e.* the business stakeholders feed the system with almost all of the information it handles.
 - the complete flexibility of the system(s), self-administered by all stakeholders except authorities.
- the disadvantages are:
 - the absence of authorities in the model, especially given that the system will handle very sensitive data (at least all production and dispensing data), with as a result:
 - an inherent risk in terms of handling of confidential data which must not be breached by any means (see the recent Pharmafakt GFD data protection case in Germany, currently under investigation, with prescription data handled by this private company at risk of being released).
 - as raised under point No. 64, the missed opportunity for using the information contained in the repository(ies) for the purposes of reimbursement, pharmacovigilance or pharmaco-epidemiology.
 - the need for manufacturers to maintain a non-stop system for handling any verification coming through the system managing the serialisation (itself interfaced with their Enterprise Resource Planning ERP and Manufacturing Execution Systems MES), as these systems would be the only place where

information about a pack could be verified even though they were primarily designed to focus on the manufacture and release for distribution of packs.

- there is no existing comprehensive organisation comprising as members all registered stakeholders involved in the handling of medicinal products. Therefore, self-administration of this option would probably result either in a multitude of systems in the absence of an imposed or *de facto* leadership or in a unique system imposed by a consortium of some prominent business stakeholders that other business stakeholders would be forced to join. This could raise issues in terms of compatibility with EU anti-trust rules and with jurisprudence, leading towards the undesirable scenario of forcing a private company to release sensitive product information to a separate non-public body (see the jurisprudence on Documed/Swissmedic from Switzerland in 2011).
- the expected added-value in terms of flexibility and cost-effectiveness compared to a central system is offset by the number of interfaces of the various potential systems that could eventually be established and the potentially complex and new system of governance that would need to be created between business stakeholders of very different scales and sizes.

In terms of cost for the different Policy Options, the comparative value of the approach is more dependent on the number of system(s) generated rather than on whether the system(s) are administered by stakeholders, by EU authorities or by national authorities. The architecture of the network of the different systems is of crucial importance in the effectiveness of the whole system. In the event of stakeholder governance (Policy Option 1), there would be a need to create additional interfaces between the administration system and the authorities for handling particular cases, such as recalls, with a concomitant extra cost. National systems not based on the same common standards such as EPCIS would need to implement compatible web-services that allow information to be exchanged. Data transformation based on standards such as Extensible Stylesheet Language Transformations (XSLT) could be of help to implement the above web-services.

Policy option 2 (EU governance):

The advantages of this option are:

- the experience of EU institutions in governing multi-country and multi-stakeholder systems, with a governance that combines EU leadership with the sound technical involvement of business stakeholders.
- the absolute independence of EU bodies, thereby guaranteeing the confidentiality of data coming from different business stakeholders and the secure control of its distribution.
- the absolute absence of financial interest in the data handled by the system, thus guaranteeing that the best choice would be taken in terms of the technical options decided on for designing the system.
- the awareness of the EU institutions for the need for a cost-effective system, with a governance model likely to involve business stakeholders in a public-private partnership at a high technical level.
- the secure access to the systems and data of national authorities, which could be interfaced with the repository(ies) for broader and more effective functioning.

- the overview afforded to a central managing body for:
 - detection of unexpected and suspicious trans-national counterfeiting trends and distribution routes.
 - detection and follow-up of inconsistent data reconciliation at repackaging level, which should be handled as a serious suspicion of falsification therefore handled from the start by authorities.
 - improved follow-up of transnational counterfeiting incidents and recalls.
 - central monitoring and planning of system activity for better management of periods of peak traffic.
- regarding the above point 67 on central repositories system storing all data from all actors in the supply chain, the EDQM is of the opinion that centralised governance does not necessarily imply centralised repositories, since incoming queries or events could be dealt with by a discovery system such as Object Naming Service (ONS), which is aimed at identifying the location of the specific repository holding the information about the serialised item; this relies on the principle of directories routing queries to the repository where the information is available.
- the above described discovery system makes it possible to combine the advantages of centralising the system management and of the distribution of repositories; this is the only way to ensure a high availability at a pan-European level, based on the distributed repositories available via web-services.
- the absence of extra costs in running such a system compared to stakeholder governance (Policy Option 1), since the EU body would administrate the system with the same administrative costs but without the additional burden of establishing a novel stakeholder governance body. The objective of creating a market that provides best value for money would be maintained since, in Policy Option 2, the specifications for the central repository would cover interfaces for the ERPs of manufacturers, the Warehouse Management Systems of wholesale distributors and the PMSs of pharmacies. Such interfaces would be inter-operable, thus endowing the system with the flexibility that would allow the various vendors to compete in offering business stakeholders interfacing with the system the best value for money.
- the possibility given to use the information contained in the repository(ies) for the purposes of reimbursement, pharmacovigilance and/or pharmacoepidemiology.

In the case of a completely centralised implementation of Policy Option 2 with a unique repository, the disadvantages are:

- the risk of handling all the data in the same place, even with multiple servers.
- the potential impact on the response time for verifications based on the distance between servers and the place of distribution in Europe.
- the lower flexibility of the system e.g. regarding the specificities of the different national environments.

Policy Option 3 (national governance):

The advantages described under Policy Option 2 remain valid for Policy Option 3 in terms of:

- absolute independence, guaranteeing the confidentiality of data.
- the absolute absence of financial interest in the data handled by the system.
- the direct access to systems and data from national authorities.
- the mitigable extra costs in running such a system if existing and future national systems are inter-operable due to the use of the same standards and state-of-the-art technical options such as xml message format for XSLT or XSLT-like interfacing.

However, there would be a higher number of separate systems that would need to be interfaced compared to Policy Option 2.

- the possibility given to use the information contained in the repository(ies) for the purposes of reimbursement, pharmacovigilance and/or pharmacoepidemiology.

The disadvantages are:

- the absence of a central managing body that might allow:
 - o detection of unexpected and suspicious trans-national counterfeiting trends and distribution routes.
 - o follow-up of trans-national incidents and recalls.
 - o central monitoring and planning of system activity for better management of periods of peak traffic.
- the possible extra costs in case of the absence of agreement between national systems on inter-operability (with numerous national systems with different message formats or IT technical options), making interfacing more difficult.

Overall, the EDQM is in favour of option 2 in absolute terms. However, national environments and constraints make it necessary to provide for a realistic scenario in which centralised public governance (option 2) is mixed with decentralised interfacing of national systems (option 3), at least for the existing national systems of mass serialisation. In this approach, there would still be economies-of-scale linked to the centralised system with sharing of resources, e.g. for the repository systems. The incurred costs for interfacing decentralised national systems could be better dealt with by using hardware appliances at server level to handle incoming messages from any external web-services.

4. Other issues related to the repositories system

72. In connection with the repositories system, there are a number of other issues which have to be considered in the delegated act.

4.1. Information of a commercially sensitive nature

73. The Commission is to take due account of the legitimate interests to protect information of a commercially confidential nature. In the context of a repositories system, the following information could be commercially sensitive:

- Information that allows the number of packs manufactured to be established;
- Information that allows the point of dispensation of a pack to be established;
- Information that allows the point of re-packaging of a pack to be established.

Consultation item n°9: Please comment on point 4.1. Are there other items of information which should be taken into consideration when addressing the issue of commercially sensitive information in the delegated act?

EDQM answer:

The EDQM agrees with the list of issues regarding commercially sensitive information. Another item of information which should be taken into consideration is information about the supplier of a re-packager. If a manufacturer obtains information about a wholesale distributor selling products of their brand, their business relationship could be affected because of the potential loss of revenue for the manufacturer. Wholesale distributors own the product they have purchased from manufacturers; therefore they understandably require protection of the information about their customers and in particular the repackagers.

This point further illustrates the EDQM's support for a public governance model. Almost any information handled by such systems is commercially sensitive because it concerns distribution flows all over Europe. Therefore, either all data have to be partitioned to avoid

any party accessing data from another party, with very high technical constraints or an independent third party has to administer the data. In a stakeholder-governed system it is not possible to establish a third party independent from any of its sponsors to carry out this task. The only valid model is for a public third party neutrally administering the system with clear rules between users, data owners, administrators and above all authorities governing the whole system.

4.2. Protection of personal data

75. The issue of protection of personal data is explicitly addressed in Directive 2011/62/EU. In any event, the repositories system would *not* contain personal data related to patients, as this is not necessary in order to fulfil the purpose of the unique identifier.

4.3. Re-packaging of medicinal products

76. Article 47a of Directive 2001/83/EC addresses manufacturing activities where the safety features are removed or covered. It obliges *inter alia* the re-packager to replace the safety features with equivalent features. An equivalent safety feature is another unique identifier, which is checked into the repositories system and replaces the original unique identifier.

Consultation item n°10: Please comment on points 4.2 and 4.3. What aspects should be taken into consideration in the delegated act?

EDQM answer:

The EDQM is in full agreement with point 4.2. The EDQM is in favour of providing patients with access to these systems for the sake of transparency, patient empowerment and ultimately strengthening their confidence in the legal supply chain and the efforts put in place by authorities and business stakeholders to secure it. This should be done by providing free access, as already implemented in a large, advanced and public-governed system like the Turkish ITS. The EDQM is of the opinion that the delegated acts should set up a framework for the implementation of such patient access, safeguarding it by referring to the Council of Europe's Convention on the Protection of Individuals with regard to Automatic Processing of Personal Data² in force in all EU countries.

Regarding point 4.2, a key issue to be taken into account is how the repackager has to ensure traceability between the incoming original packs to be checked out and the outgoing repacked packs to be checked in. According to GMP³ batch traceability must be maintained, although the means to be used are not specified. Using the system handling the unique pack identifiers for the purpose of repackaging traceability could provide some Return on Investment to the whole system, with a more precise and thus improved traceability at repackaging level. This could be crucial to retrieve repacked packs whose contents have been sourced from original packs affected by a counterfeiting incident or a quality defect.

As holders of a manufacturing licence, repackagers are responsible for operating in compliance with GMP. The unique identifier should supplement the GMP requirements and not replace them, therefore ensuring that traceability using the unique identifier should not relieve repackagers of their responsibilities. In case of a recall, a recall notification for a batch or for some packs of an original product should make the repackager responsible for

² <http://conventions.coe.int/treaty/en/treaties/html/108.htm>

³

http://www.ema.europa.eu/ema/index.jsp?curl=pages/regulation/q_and_a/q_and_a_detail_000027.jsp&jsenabled=true#

triggering and following up their own recall for the outgoing batches/packs, even if the system provides an overview of all the affected repacked batches/packs.

Considering the other topics for consultation and in particular the governance topic and the possibility of implementing several regional and national systems in Europe, the EDQM is of the opinion that the delegated acts specifying the meaning of the term 'equivalent' should cover not only the item code and the data carrier but also the security of the repository systems for the exporting and importing countries, should the two countries use different repository systems with different settings. It should also be specified that requirements for the repository system of the importing country should be met even if they are more stringent. Repackagers therefore would not be able to claim equivalence to avoid fulfilling all the requirements of the national system of the importing country.

D. CONSULTATION TOPIC N°4 - LISTS CONTAINING THE MEDICINAL PRODUCTS OR PRODUCT CATEGORIES WHICH, IN THE CASE OF PRESCRIPTION MEDICINES SHALL NOT BEAR THE SAFETY FEATURES, AND IN THE CASE OF NON-PRESCRIPTION MEDICINES SHALL BEAR THE SAFETY FEATURES

77. Directive 2001/62/EU stipulates that medicinal products subject to prescription shall bear the safety features, including the unique identifier, unless they have been listed by the Commission in a delegated act (for the purpose of this concept paper, this list shall be referred to as the 'white list').

78. Medicinal products not subject to prescription shall not bear the safety features, unless they have been listed by the Commission in a delegated act (for the purpose of this concept paper, this list shall be referred to as the 'black list').

79. The 'black list' and the 'white list' are established for the entire EU market. No differentiation is made as regards the national territories of the internal market.

80. For the purposes of ascertaining whether a medicinal product is subject to prescription, the relevant territory is the Member State where the medicinal product is intended to be made available to the final user.

81. At present it is planned to annex the 'black list' and the 'white list' to the delegated act setting out the details related to the unique identifier.

82. In order to draw up the 'black list' and the 'white list', Directive 2011/62/EU stipulates that the following aspects need to be taken into account:

- The risk of falsified medicines; and
- The risk arising from falsified medicines (i.e. the potential hazard).

83. More concretely, at least the following criteria (hereafter: 'classification criteria') shall be applied:

- The price of the medicinal product:* It is assumed that medicinal products at a very low price are, for economic reasons, less at risk of being falsified. Regarding price, in view of the risk of channelling falsified medicines into the legal supply chain at wholesale distributor level, the gross manufacturer price (i.e. the price to be paid by wholesale distributors) would have to be considered.

Moreover, 'high price' being a relative term, it would need to be established against the costs for falsifying a medicinal product. These costs are typically very low. Therefore, a manufacturer's gross price of more than 2 EUR could be considered as a 'high price'.

□ *The sales volume of the medicinal product:* It is assumed that medicinal products placed on the market in very low volumes are, for economic reasons, less at risk of being falsified. 'Sales volume' being a relative term, it would need to be established against the typical sales volume of medicinal products *per annum* in the EU.

□ *The number and frequency of previous incidents of falsified medicines reported in the Union and in third countries:* The number of incidents of falsified medicines detected within the EU, at its borders or in third countries, may be an indicator that a product or a category of product entails a higher risk of falsification. Regarding product categories, point 1 may apply.

□ *The specific characteristic of the product:* Medicinal products may have specific characteristics which make the risk of falsification unlikely: One example might be products that are delivered direct from the manufacturer to hospital pharmacies.

□ *The seriousness of the conditions intended to be treated:* Falsified medicines usually do not have the same efficacy as the original product: For example, the active substance may not be contained in the falsified medicine, or it may be contained in a higher or lower dosage than the original. Therefore, falsification of these products may have very serious consequences for patients, who will not receive the correct treatment. Examples may include oncology medicines and medicines for cardiovascular diseases.

□ *Other potential risks to public health:* Other criteria may be identified in the future for consideration in the assessment.

84. When deciding on the content of the 'black list' and the 'white list', two basic considerations apply:

□ The possibility of exemptions from the general principle laid down by the legislation should be interpreted narrowly. It should not be used as an opportunity to dilute the general principle that all prescription medicines shall bear the safety feature while non-prescription medicines shall not bear the safety feature.

□ The drafting and adoption of the initial delegated act, and of each subsequent amendment, takes around two years. Any listing of medicines, in particular as regards the 'white list', has to be carried out with a eye to future developments.

85. Moreover, regarding the scope of the safety features, it is important to be aware of the following:

□ the EU-scope of the unique identifier is non-optional: a medicinal product which falls within the scope must bear the unique identifier. A medicinal product which falls outside the scope must not have to bear the unique identifier. Thus, there is no 'optional scope' for manufacturers: A manufacturer cannot decide to apply the unique identifier to medicinal products which do not fall within the scope of the safety feature;

Independently of the EU scope, Member States have the possibility, in respect of medicinal products placed on the market on their territory, to require labelling of the unique identifier on any medicinal product subject to prescription or subject to reimbursement, for the purposes of reimbursement or pharmacovigilance.

1. Identification criteria

86. Directive 2011/62/EU leaves open the criteria for identifying medicinal products to be listed in the 'black list' and the 'white list' (hereafter 'identification criteria'). Four different approaches are put forward for discussion:

□ Identification by Anatomical Therapeutic Chemical Code (ATC): This criterion is easy to establish. However, taken on its own it may be insufficient, in view of the classification criteria set out above.

□ Identification by brand name: Apart from being a very narrow identification criterion, the main difficulty concerns the differing brand names of identical medicinal products in the EU. In addition, brand names may change. Lastly, there may be a variety of commercial reasons that militate against highlighting individual brands in a delegated act on falsified medicines.

□ Identification by the name of the active pharmaceutical ingredient: The difficulty as set out above for the ATC also applies here.

□ A flexible approach on a case-by-case basis: This leaves room for some flexibility. This flexibility would facilitate the application of the classification criteria set out above.

Consultation item n°11: Which approach seems the most plausible from your view? Can you think of arguments other than those set out above? Can you think of other identification criteria to be considered?

EDQM answer:

The EDQM is of the opinion that the establishment and maintenance of such lists without absolutely clear-cut criteria has proven to be extremely difficult, having led in the past in some cases to policies not being adopted, like the Directive on GMP for certain excipients. Also, from the feedback from stakeholders during our own consultation, it appears that for a significant number of them all products have to be covered. In the EDQM's opinion, the main reasons are:

- that allowing some products to be unprotected by a safety feature would signal to counterfeiters which products are the easiest target for counterfeiting.
- that the fixed costs for putting in place the repository system(s) only for prescription medicinal products would be about the same as the costs for a system in which all products are uniquely identified.
- that the possible Return on Investments for manufacturers (*e.g.* improvement of the efficiency of the supply chain) would be significantly reduced in case of a partial implementation of the unique identifier.
- that the prescription status of a product can differ from one country to another; if serialisation depended on prescription status it would be even more complicated to manufacture a product that has different prescription statuses (see the Melclass database on classification of medicines as regards their supply hosted by EDQM⁴).

The discussion on how to determine which products should be included in the different lists illustrates in itself the difficulty of the task. Amongst the listed possibilities, what seems to be the most pragmatic approach (name of the active substance) raises the issue of the strength of the active substance or its combination with another active substance, which could influence the risk factor for the finished product.

⁴ <http://www.edqm.eu/melclass/>

2. Applying the classification criteria

87. In order to apply the classification criteria in Article 54a(2) of Directive 2001/83/EC consistently, a rough guide might be to adopt a quantified approach. The following should serve as an example of how such a quantified approach could be applied:

Criteria 1: Price Volume	High price: 5 points; Low price: 1 point
	High volume: 5 points; Low volume: 1 point
Criteria 2: Incidents in the EU or third country	Several incidents: 5 points; No incident: 1 point
Criteria 3: Characteristic of the Product	Characteristics indicate risk of falsification: 5 points; Characteristics indicate no risk of falsification: 1 point
Criteria 4: Severity of the conditions intended to be treated	Conditions severe: 5 points; Conditions not severe: 1 point
Criteria 5: Other potential risk to public health	Max. 5 points.

On the basis of this scheme, it would be considered that:

- A prescription medicine which has 6 points or less is listed in the 'white list';
- A non-prescription medicine which has more than 10 points is listed in the 'black list'.

88. An approach along these lines would remain within the logic of the legislation (see the introduction to this consultation topic), i.e. as a general rule, it would include prescription medicines in the scope, while excluding non-prescription medicines.

Consultation item n°12: Please comment on the quantified approach set out above.

EDQM answer:

See above consultation item n°11 for the EDQM's comments on the overall approach for classifying medicines. On the particular question of the classification criteria, the EDQM wishes to raise two issues as examples of the difficulty of such a classification:

- the price of product and the risk of falsification could be unrelated, e.g. in the case of the high reputation of a brand of inexpensive products.
- risk classification from records of counterfeiting incidents in EU or in third countries would make it necessary to:
 - o have a comprehensive tool for monitoring this, which even at EU level only is already a challenge given the numerous border cases with illegal medicines or food supplements with pharmaceutical active ingredients and the need to rely on confirmed cases.

- have the same tool at global level, screening out products with a high number of incidents recorded in third countries because of national or regional specificities and with a low number of incidents recorded in EU.
- take into account only confirmed or even closed cases in order to weight them, otherwise a serious but isolated incident could be counted as an incident at global scale.

Procedures for the notification of medicinal products from the national competent authorities to the Commission

89. The delegated act shall contain procedures for the notification to the Commission of those medicinal products which they judge to be at risk of falsification and those which they deem not to be at such risk, and a rapid system for evaluating and deciding on such notification.

2. Date of application of the delegated act

90. According to Article 2(2)(b) of Directive 2011/62/EU, the date of application of the delegated act is three years after the date of publication of the delegated act.

Consultation item n°13: Please raise any other issue or comment you would wish to make which has not been addressed in the consultation items above.

The EDQM would, in addition, like to supplement its commentary with the topic of opening up medicine verification to patients. By securing the medicines supply-chain in co-operation with authorities and business stakeholders, patient safety is protected and the confidence of patients in the legal supply-chain is reinforced. With this goal in mind, the EDQM promotes the provision of access to patients of the verification function in the future traceability system, albeit with strictly limited access rights. This gives patients the possibility of verifying their medicines, while also clearly demonstrating that preventive actions are being taken by the actors in the supply-chain and the competent authorities. The supply of medicines to patients relies on business stakeholders operating a suitably regulated supply-chain for medicines manufactured, distributed and dispensed in accordance with appropriate quality standards. The confidence of patients in this overall supply-chain needs to be maintained and strengthened. There is also a clear and growing trend for patient empowerment, with manufacturers already preparing for modern patient information channels set forth in the framework of the future updated requirements on patient information. It is expected that these new tools will also improve patient compliance. It is the opinion of the EDQM that the establishment of the medicine verification system should be taken as an opportunity to link it to these new information channels, especially in the scenario of a public-governed system that is supported by the EDQM and with more efficient information control by the authorities. Last but not least, the Directive envisages in Article 117a that member states shall have a system in place which allows them to recall, where necessary with the assistance of health professionals, medicinal products from patients who received suspected falsified medicinal products, products suspected to have a quality defect, recalled products and products withdrawn from the market. A patient interface could play a crucial role for effective implementation of this requirement.