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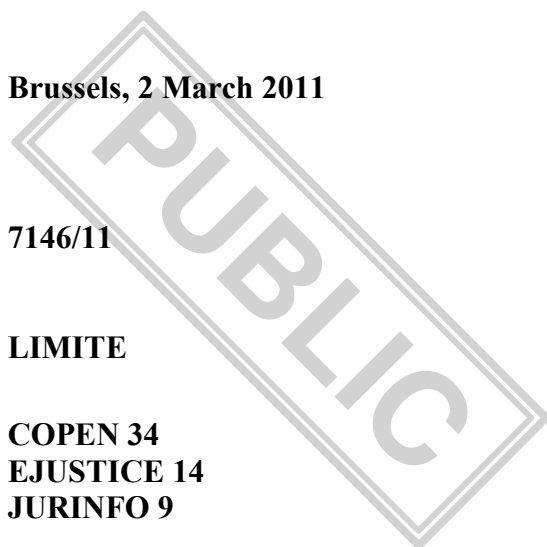
NOTE

from:	General Secretariat of the Council
to:	Delegations
Subject:	ECRIS Logging, Monitoring and Statistics Analysis

Delegations will find in the Annex the revised text of the ECRIS Logging, Monitoring and Statistics Analysis as resulting from the observations submitted by the Member States and examined during the discussions at the Working Party on Cooperation in Criminal Matters, which met on 16 February 2011. Changes are indicated by underlined text as against the initial ECRIS Logging, Monitoring and Statistics Analysis.

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European Commission – DG Justice

iLICONN Consortium (Bilbomatica – Intrasoft – Unisys)

ECRIS Technical Specifications Logging, Monitoring and Statistics Analysis

Document Information

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Document History

VERSION	DATE	AUTHOR	DESCRIPTION
0.1	01/11/2010	DCO	First draft
0.2	03/11/2010	DCO	Updates in various sections
0.3	10/11/2010	DCO PAT	Updates in various sections after internal revision
0.4	10/11/2010	DCO	Update in chapter 6 after internal revision
0.5	11/11/2010	DCO PAT	Updates in chapter 6 and 7 after internal revision
0.6	11/11/2010	DCO PAT	Updates in chapter 6 and 7 after internal revision
0.7	12/11/2010	LCO	Revision
0.8	24/11/2010	DCO	Implementing review cycle comments
0.9	28/11/2010	LCO	Revision
1.0	13/12/2010	DCO LCO	Revision including the agreements reached during the Expert Group Review meeting on 01-Dec-2010 and COPEN meeting on 10-Dec-2010
1.1	13/12/2010	LCO	Minor corrections after revision by DG JUST
1.2	23/12/2010	LCO	Addition of missing indicators B-03.11 and B-03.12 in chapter 7.3, in accordance with the agreements reached during the Expert Group Review meeting on 01-Dec-2010 and COPEN meeting on 10-Dec-2010
1.3	23/02/2011	DCO	Implementation of comments and changes agreed during the Expert Group review meeting on 16-Feb-2011
1.4	28/02/2011	LCO	Implementing comments from DG JUST
1.5	01/03/2011	DCO	Minor corrections after revision by DG JUST

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1 DOCUMENT

1.1 Purpose

This document is a formal product of the *ECRIS Technical Specifications* project for the European Commission – DG Justice and produced by the iLICONN Consortium.

The main purpose of this document is to describe the monitoring of the functioning of ECRIS, based on the establishment of non-personal statistics and of logging systems and procedures relating to the exchange through ECRIS of information extracted from criminal records.

This document assumes that the readers have a good and detailed knowledge and understanding of the following:

§ ECRIS legal instruments

§ ECRIS Technical Specifications – "Inception Report" document

§ ECRIS Technical Specifications – "Technical Architecture" document

§ ECRIS Technical Specifications – "Security Analysis" document

§ ECRIS Technical Specifications – "Business Analysis" document

1.2 Scope

This document provides a definition of logging, monitoring and statistics concepts as well as how they relate to each other. It aims at providing the necessary information for the implementation of the logging systems and procedures which allow producing non-personal statistics to be used for the monitoring of the functioning of ECRIS.

 In particular, this document contains:

§ A description of the stakeholders and their subsequent roles and responsibilities in the ECRIS logging, statistics and monitoring activities.

§ The specific purpose, procedures and rules governing the ECRIS logging systems, the production of national and European statistics as well as the overall monitoring of ECRIS.

§ An exhaustive list of concrete statistics to be collected and categorised in three layers: technical, functional and business.

1.3 References

The following sources have been used as input for the elaboration of this document:

[1]   ECRIS Legal Basis – Council Framework Decision 2009/315/JHA

Council Framework Decision 2009/315/JHA of 26 February 2009 on the organisation and content of the exchange of information extracted from the criminal records between Member States (OJ L 93/23 of 07.04.2009)

[2]   ECRIS Legal Basis – Council Decision 2009/316/JHA

Council Decision 2009/316/JHA of 6 April 2009 on the establishment of the European criminal records Information System (ECRIS) in application of Article 11 of Framework Decision 2009/315/JHA (OJ L 93/33 of 07.04.2009)

[3]   Network of Judicial Registers (NJR) – Common Statistics Guidelines 2.1 – version 1.1 a (approved) of 06 July 2010

[4]   Network of Judicial Registers (NJR) – Technical References – version 1.4 (draft) of 23 November 2009

[5]   Network of Judicial Registers (NJR) – XML Listings – version 1.4 (final) of 01 July 2009

[6]   NJR WSDL and XML Files v1.4.2 of 21 January 2009 (final)

"CommonTables_and_XML_rel1-4-2_20090121.zip" file containing:

– RegisterService-1.4.2.wsdl (version 1.4.2)

– common.xsd (version 1.4 of 18 December 2008)

– CommonTables-1.3.xsd (version 1.3)

– CommonTables-1.4.2.xml (version 1.4.2)

– error.xsd (version 1.4 of 02 November 2005)

– information.xsd (version 1.4 of 02 November 2005)

– notification.xsd (version 1.4 of 22 November 2005)

– receipt.xsd (version 1.4 of 02 November 2005)

– request.xsd (version 1.4 of 02 November 2005)

[7]   NJR WSDL and XML Files v1.5 (draft)

– RegisterService-1.5.wsdl (draft version 1.5 of 11 August 2010)

– common.xsd (draft version 1.5 of 10 June 2010)

– CommonTables-1.5.xsd (draft version 1.5)

– CommonTables-1.5.xml (draft version 1.5.0)

– error.xsd (draft version 1.5 of 10 July 2010)

– information.xsd (draft version 1.5 of 10 July 2010)

– notification.xsd (draft version 1.5 of 10 July 2010)

– receipt.xsd (draft version 1.5 of 10 July 2010)

– request.xsd (draft version 1.5 of 10 July 2010)

[8]   ECRIS Technical Specifications - Inception Report v1.02 of 22 October 2010

[9]   ECRIS Technical Specifications - Technical Architecture v1.0 of 22 October 2010

[10]   ECRIS Technical Specifications - Security Analysis v1.0 of 22 October 2010

[11]   ECRIS Technical Specifications – Business Analysis v1.4 of 28 February 2011

1.4   About this Document

1.4.1   Elaboration of this Document

This "Logging, Monitoring and Statistics Analysis" document has been drafted by the iLICONN staff based on the following input:

§ The documents listed in the references above

§ Information gathered during the preliminary on-site visits of the following Member States' central authorities:

– 19-Jul-2010 / 30-Jul-2010: Belgium – Service Public Fédéral Justice – Service Casier Judiciaire Central

– 26-Jul-2010 : France – Ministère de la Justice – Casier Judiciaire National

– 29-Jul-2010 : Germany – Bundesamt für Justiz – Bundeszentralregister

– 05-Aug-2010 : United Kingdom – Association of Chief Police Officers (ACPO) – ACPO Criminal Records Office (ACRO)

– 09-Aug-2010 : Spain – Ministerio de Justicia – Registro central de penados y rebeldes

§ The answers provided by the following Member States' central authorities to the questions defined in the "Inception Phase Questionnaire" document that has been sent out by the European Commission to all Member States' contact points on the 04th of August 2010 (listed in alphabetical order):

Austria (AT), Belgium (BE), the Czech Republic (CZ), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR), Hungary (HU), Italy (IT), Lithuania (LT),

          Luxembourg (LU), the Netherlands (NL), Poland (PL), Portugal (PT), Romania (RO), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), the United Kingdom (UK)

§ Concrete examples of NJR pilot project's "notifications", "requests" and "information" messages provided by the following Member States: BE, FR, ES and UK.

§ Concrete examples of statistics produced in the NJR pilot project.

§ The comments issued by the European Commission and the following Member States on the "Logging, Monitoring and Statistics proposals" document v0.04, listed in alphabetical order:

          The Czech Republic (CZ), Estonia (EE), France (FR), Germany (DE), Luxembourg (LU), Poland (PL), Spain (ES), Sweden (SE), the United Kingdom (UK)

§ The 127 comments issued in relation to the "Logging, Monitoring and Statistics Analysis" document v0.7 by the European Commission and the following Member States, listed in alphabetical order:

          Germany (DE), Luxembourg (LU), France (FR), Poland (PL), Spain (ES)

§ The conclusions and agreements reached during the Expert Group Review meeting on 01 December 2010 and COPEN Working Party meeting on 10 December 2010.

§ <u>The comments issued by the Member States and the European Commission on the previous version of this document.</u>

§ <u>Conference calls held with experts from DE, ES, FR and PL between 7 and 9 February 2011 and direct e-mail contacts with several other Member States for discussing the aforementioned comments.</u>

§ <u>The discussions and agreements that have been reached during the Expert Group Review meeting on 16 February 2011.</u>

1.4.2   Understanding this Document

This document comes with a "Glossary" document that provides definitions for the specific terms that are used throughout the *ECRIS Technical Specifications* project.

By convention, all words marked in italic in this document can be looked up in the "Glossary" document. The bold font is used for emphasising a specific term or part of a sentence. The underlines mark the text that has been added or modified since the last version while the strike-through marks the text that has been removed or replaced.

In case of doubts about the exact meaning of a term, please consult first the "Glossary".

Should you still have any doubts about the meaning of a specific sentence or paragraph, please do not hesitate to take direct contact with the following persons by telephone or via e-mail, at your best convenience:

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1.4.3   Providing Comments

As described in the "Inception Report" document, all major deliverables produced by the iLICONN Consortium are undergoing a "Review Cycle" during which all EU Member States experts are invited to provide comments.

Commenting this document

Since the iLICONN staff needs to collect, compare and analyse the feedback from 27 Member States on the same document – thus potentially a large number of comments – it uses a tool that allows easily extracting the comments from MS Word documents.

Therefore, for commenting **this** document, please apply the following guidelines:

§ All comments are to be written in plain English. Comments provided in other languages cannot, unfortunately, be taken into account.

§ The comments must be specific to and must relate to the text (sentence and/or paragraph) being revised.

§ Please use simple wording and be as specific, concise and clear as possible in order to avoid ambiguities.

§ When referring to specific terms, acronyms, abbreviations that are common in your daily jargon but that are not defined in the *Glossary* document, please define them first.

§ Write your comments directly in this MS Word document, by proceeding as follows:

  – First select a word, a part of a sentence or a paragraph (this can be done for example by double-clicking on a word or by dragging your mouse over parts of the text while keeping the left mouse-button pressed).

    Attention:

    Please note that a **minimum of 4 characters** must be selected in order for our commenting tool to grab the comment. Furthermore, comments on diagrams and embedded pictures are also not taken into account. In such cases, please select the caption text underneath the diagram or image.

  – Once a word, part of a sentence or paragraph has been selected, insert an MS Word comment in which you can type your remarks.

    An MS Word comment is typically displayed as a red balloon in the right margin of the document and usually starts with the abbreviation of your name and the timestamp at which the comment is being written. Depending on your version of MS Word, use the following steps for inserting a comment:

    MS Word 2007 and MS Word 2010:

    1. Select the text you would like to comment upon
    2. Open the **Review** ribbon, select **New Comment** in the **Comments** section
    3. In the balloon that appears in the right margin, type your comment
    4. Click anywhere in the document to continue editing the document

    MS Word 2003:

    1. Select the text you would like to comment upon
    2. From the **Insert** menu, select **Comment** (or click on the **New Comment** button on the **Reviewing** toolbar)
    3. In the balloon that appears in the right margin, type your comment
    4. Click anywhere in the document to continue editing the document

    The text will have coloured lines surrounding it, and a dotted coloured line will connect it to the comment. To delete a comment, simply right click on the balloon and select **Delete Comment**.

§ Please do not use the MS Word "track changes" tool and do not write your comments as plain text in the MS Word file.

§ In case that you want to provide general comments or remarks that are not specific to a part of the text of this document, please provide them into a separate document and/or e-mail.

In case that you need to translate this document to another language, and then translate back your comments to English, please make sure that your comments are provided in the form described above and that they have not been altered or moved to another section of the text during the translation process.

Commenting the technical artefacts

The *XSD* and *XML* files that are joined to this document can unfortunately not be commented using the same approach as for the MS Word files. Thus, for providing comments to these files, please use the following guidelines:

§ General comments affecting **globally** one or more of the technical files: the general comment can be provided in this document in the appropriate sections where the technical files are listed or described.

§ Specific comments that affect **specific** elements within the technical files, such as comments on specific *XSD* elements, specific documentation within the technical artefacts, etc. are to be provided in a separate "Comment Inspection Sheet" spread-sheet. An empty MS Excel file is provided together with this document and with the technical artefacts. This file is to be filled in with the following information for each specific comment:

  – Column "#": please indicate here a unique number for your comment

  – Column "File Name": please indicate here the exact name of the XSD or XML file to which the comment applies

  – Column "Rvwr": please indicate here the 2-letter code of your Member State

  – Column "Initial Ver.": please indicate here the version of the XSD or XML file to which the comment applies (the version is located in the technical files at the top)

  – Column "Original comment & suggestion by reviewer": please indicate here the comment, by first indicating the part of the file concerned (i.e. name of XSD element, etc.) and then entering the text of the comment

It is expected that **one comment** is provided **per line** in the spread-sheet. Please avoid typing several comments in the same line, even if they refer to the same technical file or same technical element within the file. This is asked in order to avoid overlooking or forgetting to process comments accidentally.

2   INTRODUCTION

The Council Decision 2009/316/JHA on the establishment of the European Criminal Records Information System (ECRIS) clearly stipulates in article 6 – Implementing measures (2):

"The representatives of the relevant departments of the administrations of the Member States and the Commission shall inform and consult one another within the Council with a view to: (…)

(b) coordinating their action for the development and operation of ECRIS, concerning in particular:

(i)   the establishment of logging systems and procedures making it possible to monitor the functioning of ECRIS and the establishment of non-personal statistics relating to the exchange through ECRIS of information extracted from criminal records

(…)".

Thus, one of the objectives of the current *ECRIS Technical Specifications* project is the establishment of such monitoring, logging and statistics systems and procedures in order to ensure an effective and efficient evaluation of the functioning of ECRIS.

There is a clear and direct connection between the monitoring of the system and the logging and statistics notions.

The **monitoring** process consists in the detection and diagnosis of the identified potential problems and inconsistencies in the transmission of information on criminal records between ECRIS applications.

As such, its main purpose is to ensure the implementation of the right corrective actions and evolutions in order to guarantee:

§   **primarily**, that ECRIS is functioning effectively and in compliance with the legal instruments;

§   **secondarily**, to ensure a continuous improvement and evolution of the ECRIS software

The **monitoring** process builds upon the statistical data collected through the logging systems and procedures.

The **non-personal statistics** materialise as the collected sets of data gathered by the logging systems and procedures and which are consolidated at national and European levels. The non-personal nature of these statistics refers to the generation of consolidated figures on the exchanges of data that do not disclose individual identities or personal information.

The concept of **logging** in this context refers specifically to the recording of information during the execution of the specific ECRIS data exchanges.

Figure 1 - ECRIS monitoring, statistics and logging interdependency

In order to offer a comprehensive overview on the monitoring, statistics and logging processes, this document is structured in the following sequence:

§ The monitoring is described first, as it represents the overall purpose of the collection and consolidation of statistical data in order to allow the detection, analysis and evaluation of all the events occurring during the transmission of information on criminal records between the 27 central authorities through the ECRIS software. Performing the monitoring is critical in supporting the decision-making process that should result in defining corrective actions or improvements for ECRIS.

§ The statistics principles and procedures are described next, as they represent the concrete and consolidated output of the logging on which the monitoring is based.

§ The logging procedures and rules follow, providing descriptions of how the processes of recording of information are to be performed.

§ Finally this document presents the detailed set of information elements and events to be recorded and for which statistics are to be produced by the Member States.

It must be noted that the content of the "Logging, Monitoring and Statistics Analysis" focuses solely on the exchange of information from one ECRIS software implementation to another one, leaving out the implementation of other functionality such as the end-user interfaces to be manipulated by the personnel of the Member State's central authority, the internal technical interfaces towards the national criminal records register software systems, internal storage systems (e.g. database or internal file system), internal workflows for guiding the end-users through the internal processing of the messages and other functions that are not directly dedicated to the exchange of information.

Please note also that the monitoring, collection of statistics and logging processes are analysed based on a three layer approach:

§ **Technical**: The quality of information handled by this layer is purely technical. It includes information provided from the different IT assets which are utilised so as to realise an ECRIS implementation. For example, information for this layer can be provided from logs created while validating structurally a message during an exchange.

§ **Functional:** This layer concentrates on the content of the messages exchanged through ECRIS and more specifically on the output provided by applying logical rules so as to ensure validity, consistency and integrity. As defined already in the "Technical Architecture", this layer is not concerned with business aspects such as the type of the message or business rules for validating the content of the message. Indeed, the content in this layer is only perceived from a logical validity standpoint, without taking under consideration the particulars of specific validation rules per Member State.

§ **Business**: This layer focuses towards the business processes defined for the ECRIS information exchange. It includes information related to aspects such as the type of message, message validation against business or "Member State"-specific rules and specific parts of the business process, such as for example request deadlines, person matching and identification process results, etc.

3 STAKEHOLDERS, ROLES AND RESPONSIBILITIES

3.1 Stakeholders

This section defines the main stakeholders and clarifies their roles and responsibilities towards the monitoring, logging and collection of statistics in the context of ECRIS. The following stakeholders are identified:

§ For **the 27 EU Member States**:

  – The Member State delegations which are gathering in the Working Party on Cooperation in Criminal Matters (referred to as "COPEN Working Party")

  – The central authority of every Member State ensuring the implementation of the ECRIS software and its daily operation

  – The designated legal and technical experts which gather regularly in judicial and technical workgroups, as described in the "Inception Report" document

§ A **central entity** having an executive and organisational purpose, handling all horizontal tasks relating to maintenance, evolution and dissemination of information.

3.2 Roles and Responsibilities

3.2.1 Member States

The Member States are involved in three different ways, such as:

1. The appointed national representatives reconvene in the COPEN Working Group which acts as the appropriate framework structure formally responsible for the adoption of **decisions**. In particular, it plays the role of "Steering Committee", deciding on:

  – the implementation of appropriate corrective actions required to handle problematic situations identified during the monitoring activity, and ensuring that these decisions are materialised in the right set of tools and actions

  – the evolution of the monitoring, statistics and logging procedures and outputs

Furthermore, the COPEN working group, supported by the ECRIS judicial and technical workgroups and of the central entity, ensures the continuous improvement and evolution of the ECRIS software in line with the volume and structure of the conviction information exchanges between the 27 Member States.

Therefore, it is proposed that the COPEN Working Group meets and discusses the ECRIS-related matters **at least twice a year**, in order to ensure a continuous and efficient steering of the system. Of course, a large degree of flexibility should also be adopted by reconvening as often as required, especially if urgent matters arise.

As a result of the monitoring activity and based on the evaluation of the objective elements collected, the COPEN Working Group decides in particular upon acting towards improving the operational effectiveness and performance of the ECRIS software by:

  – Elaborating the future versions of the ECRIS technical specifications;

  – Correcting/updating the content of the information exchanges;

  – Updating the non-binding manual for practitioners;

  – Clarifying inconsistencies and misunderstandings resulting from the interpretation of information exchanged.

2. The central authority of every Member State is in charge of operational tasks, such as the maintenance, development and administration of the national implementation of the ECRIS software. Therefore it has the responsibility to perform the following:

  – ensuring the correct implementation of the logging procedures and collecting the non-personal statistical data during the ECRIS information exchanges;

- performing the first consolidation of the data collected at national level
- providing the consolidated statistics to the central entity
- ensure the immediate monitoring of the national ECRIS implementation

Please note that each Member State is free to choose how these tasks are fulfilled. The role does not explicitly imply that a central authority has to perform these tasks either internally or by outsourcing them. This role merely defines the zone of responsibility of the central authority.

3. The appointed national legal and technical experts meet on a regular basis respectively in the judicial and technical ECRIS workgroups. They **evaluate** the possibility to apply changes and to produce appropriate proposals for remedial actions in order to tackle the possible problems identified through the monitoring activity. They act as an **advisory** board on the technical and legal aspects of the ECRIS data exchanges and provide thus support to the decision-making activity of the COPEN Working Party.

Considering the specialised nature of the topics discussed and the specific expertise required, the two workgroups act as separate bodies, each concentrating on a specific coverage such as:

- The technical workgroup addresses the technical and functional issues (e.g. connectivity, versioning, logging systems, statistics and monitoring processes from a technical perspective, etc.)
- The judicial workgroup discusses the legal matters (e.g. content of exchanged ECRIS messages, content of non-binding manual for practitioners, statistics and monitoring processes from a legal perspective, etc.).

The judicial and technical workgroups bring together appointed experts from all 27 Member States as well as representatives of the central entity. Considering that some of the matters discussed require both business as well as technical input, for reasons of linearity and coherence, Member States may appoint the same experts to participate in both instances.

The meetings of the ECRIS judicial and technical workgroups should be chaired by the specific Member State ensuring the Presidency of the Council of the European Union, and should have a frequency matching at least that of the COPEN Working Party meetings, but reconvening also as often as important matters arise from the monitoring of ECRIS.

3.2.2   Central Entity

In accordance with the decentralised nature of ECRIS, the proposed creation of a central entity may prove beneficial for the effective coordination and organisational support required.

In the context of the monitoring, logging and statistics systems and procedures, the following activities are to be carried out on a central level:

§ grouping, consolidating and analysing the non-personal statistical data gathered by each of the 27 Member States;

§ distributing the consolidated set of non-personal statistical data and related reports to all Member States;

§ acting as the central helpdesk, providing to all the users of ECRIS a central point of contact, endowing first level support and gathering any common and/or special technical, business and functional events and/or problems identified during the monitoring of ECRIS

§ organising and coordinating the judicial and technical workgroups

After the overall consolidation of non-personal statistical data, the central entity's role is to **emphasise** through a specialised report all resulting matters to be addressed, based on the analysis of the collected and consolidated ECRIS information. It should signal **all** the identified issues, with a focus on the most urgent ones, so that these can be properly addressed in the judicial and technical workgroups, and be decided upon accordingly in the COPEN Working Party meetings. The central entity should also formalise by written procedure all the agreements reached.

According to article 3(7) of the Council Decision 2009/316/JHA, the **European Commission** "… shall provide general support and technical assistance, including the collection and drawing up of statistics …" and shall thus act as central entity for the tasks listed above that are considered as being part of general support and technical assistance. For the other tasks to be carried out at a central level but that do not fall into the responsibility of the European Commission, the COPEN Working Party needs to mandate the appropriate body.

> Please note that establishing the detailed description of the mission of the central entity is essential for a successful implementation and functioning of ECRIS but is out of scope of the *ECRIS Technical Specifications* project and of this document.

4 MONITORING

The monitoring aims at detecting, analysing and evaluating the events occurring in the transmission of information on criminal records between the 27 central authorities through the ECRIS software. It supports the decision-making process that should result in defining corrective actions or required improvements.

The monitoring process is carried out through continuous evaluation and correlation of the non-personal **statistical** data produced by the **logging** systems and procedures, throughout all message exchanges performed via ECRIS.

4.1 Purpose

The monitoring activities are performed collaboratively by all 27 Member States, supported by the aforementioned central entity, and constitute the main source for assessing the effectiveness of ECRIS against its mission.

It is in the monitoring process where the figures provided by the non-personal statistics are interpreted into trends, individual issues are isolated, and the best course of actions are decided.

The accuracy, completeness and objectiveness of the monitoring are important for ensuring the proper level of **reactivity** when technical, functional and business errors are identified. According to its purpose, the ECRIS monitoring is twofold:

§ **Periodical** monitoring

It is performed monthly, yearly or at other time intervals such as once every two months, once every six months, before discussions in the judicial and technical workgroups and the COPEN Working Party, etc. It is based on the statistics consolidated at national level by the Member States and at European level by the central entity.

The purpose of the periodical monitoring is to allow the measuring of the quality of the services provided by ECRIS (i.e. its performance) as well as the level of legal compliance, meaning the verification of the extent to which the system is operated in compliance with the legal instruments.

As a positive side-effect, it also allows proactive behaviour in the management of ECRIS since it facilitates the identification of negative tendencies and helps anticipating the occurrence of future problems in the functioning of ECRIS.

§ **Immediate** monitoring

Certain events that emerge during the logging activity require an immediate reaction at the level of the central authorities of the Member States. The purpose of the immediate monitoring is to rapidly solve situations that are blocking, such as transmission problems, issues on the specific content of a message that hinders its processing, security breaches, etc. This type of monitoring is generated mainly by technical and functional errors, but may also occur after messages are successfully validated functionally and technically but still contain problematic and illogical issues.

For example, Member States are expected to have such an immediate reaction when encountering the following:

– Technical errors, such as repeating occurrences of connectivity issues leading to the impossibility to transmit messages in ECRIS

– Security breaches

– Functional errors like the occurrence of illogical identification information received in a notification or request message (e.g. inside the name of the person field, the type of identification document is inserted), usage of wrong or invalid reference values, etc.

– Illogical occurrences, like messages addressed to the wrong Member State, containing illogical data (e.g. birth dates in the future), identical messages transmitted repeatedly, etc.

– Incoming messages containing an excessive amount of dummy values for elements defined as "obligatory" by the ECRIS legal instruments.

The monitoring process focuses towards reaching the following main objectives:

§ **Effectiveness:** This term refers to the measuring and evaluation of the capability of ECRIS to appropriately perform the required information exchanges between Member States. The effectiveness of the system is evaluated through the monitoring of various parameters of ECRIS like: availability (such as network or system availability), dependability and capability (for example, the system is capable to support the number of messages the Member States wish to exchange).

§ **Performance:** This term refers to the measuring of the overall quality of the services provided by ECRIS as a whole system, including the efficiency ~~of the~~ of the information exchanges, the content quality of the information sent/received, the efficiency in the processing of the information, etc. It can be estimated through various parameters such as the monitoring of the rate of success of the various message exchanges (e.g. rate of successful notification messages, rate of successful request for criminal records information, rate of successful request reply messages, etc.), the usage of dummy values, the usage of catch-all categories of information, the usage of "remarks" properties, etc.

As an example, if one convicting Member State systematically uses the 2700 00 – "Other offences" open catch–all category instead of using more specific category codes while indicating the proper national title of the offence, the processing of the information by the Member State receiving the information – in this case properly identifying the adequate category of the offence – is made more complicated and thus decreases the overall efficiency. Another example is the frequent usage of the "remarks" properties, which always contain information in an unstructured non-standardised textual form, and which thus increases the need for manual processing and translation, reducing thus the overall efficiency of ECRIS.

§ **Compliance:** This term refers to the verification of the extent to which ECRIS is operated in compliance with the legal instruments. This is achieved by monitoring appropriate elements during information exchanges, such as the occurrences of elements defined as obligatory by the legal instruments but carrying dummy values, systematic usage of catch-all categories of offences or sanctions or the degree of compliance with the legal deadlines for replying to requests.

4.2   Procedures

4.2.1   Periodical Monitoring

As expressed before, the **periodical** monitoring aims at measuring the overall performance of the services provided by ECRIS, but also the extent at which the system is operated in compliance with the legal instruments.

Therefore, this type of monitoring is based on an on-going cycle consisting of the following activities:

§ **Highlighting discrepancies** in the different sets of non-personal statistical data received from the national central authorities. Such discrepancies may show errors in the functioning of ECRIS, in the functioning of the logging systems, security issues or other functional or operational issues.

The identification of such discrepancies is performed at two levels:

−   On the national level, by each central authority, as a result of a first level of consolidation of the ECRIS statistical data collected during the logging.

−   On the central level, by all the Member States together with the central entity, as a result of the overall consolidation of the statistical data collected from all the 27 Member States. More concretely, the central entity is responsible for the central consolidation of the statistical data transmitted by the Member States, and consequently provides a first report to be submitted to the experts of the Member States' central authorities. At this level, other types of discrepancies can be spotted as the entire statistical set of information is available, thus the comparison between the statistical indicators reported by any pair of Member States can easily be performed.

Thus, the resulting discrepancies may be those occurring between corresponding statistical indicators of two different Member States. For example, the central authority

of Member State "A" logs the transmission of 12 notification messages to the central authority of Member State "B", while in the same period of time, Member State "B" logs and records in statistical data the receiving of only 10 notifications from Member State "A".

§ **Deciding and implementing corrective actions and proactive decisions** – once the occurrence of discrepancies has been highlighted, the decision to identify and implement the right set of corrective actions is twofold:

- If the highlighted discrepancies have a rather narrow coverage, concerning only one or a very limited number of participating Member States, the necessary measures are agreed bilaterally and implemented only at the level of the affected Member States.

- If the highlighted discrepancies have a general coverage and are affecting all the participating Member States, the necessary measures are agreed upon by all the Member States within the COPEN Working Party, and implemented – for example correction of technical related errors, correction of logging systems, etc. – either by updating the ECRIS technical specifications and/or by updating the national ECRIS software implementations. The identification of negative tendencies and anticipating the occurrence of future problems related to the functioning of ECRIS allows also for proactive decisions to be taken.

§ **Evaluation of the current situation** – after the corrective measures and/or evolutions have been decided and implemented accordingly, the situation is reassessed through a consequent re-evaluation of the spotted discrepancies, in order to measure the effectiveness of the corrective actions. This phase is conducted at the same levels where the discrepancies were originally identified: the level of the specific Member States concerned as well as at the central entity level.
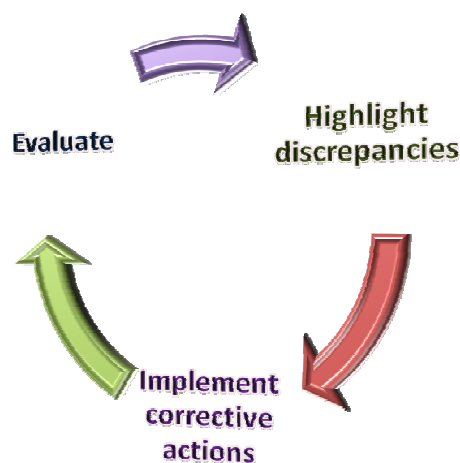

Figure 2 - ECRIS monitoring cycle

4.2.2   Immediate Monitoring

As expressed before, the **immediate** monitoring is mainly triggered by technical and functional errors that occur, but also by messages that contain problematic or illogical information although they have been technically validated by the ECRIS software.

Due to the critical nature of such errors, and their potential incidence on the processing of the information, such situations require an immediate reaction, either from the Member State's central authority initiating the information exchange or its receiving counterpart. The corresponding Member States' central authorities should then contact each other as quickly as possible in order to identify together the causes and possible solutions for the specific problem at hand. Since such monitoring and immediate reaction is of bilateral nature, it is left at the discretion of the Member States to decide how they will perform such tasks.

It is recommended however that the Member States' central authorities systematically keep the central entity informed, which in turn can then keep logs of the occurred problems, enrich

the knowledge base, communicate and coordinate actions (for example with the sTESTA point of contact), etc.

5 STATISTICS

As defined in the Council Decision 2009/316/JHA – Article 6(2 b), in order to coordinate the actions for the development and operation of ECRIS, the relevant departments of the Member States and the European Commission shall inform and consult together with a view to establish non-personal statistics relating to the ECRIS exchange of information extracted from criminal records.

These statistics represent the end result/output of the logging process, and provide an accurate and exhaustive set of objective indicators reflecting the effectiveness, performance and legal compliance of the message exchanges supported by ECRIS.

5.1 Purpose

The purpose for the collection of statistics is to provide accurate objective and factual information as input for conducting the monitoring process described earlier.

	The purpose of collecting non–personal statistical data **is not** that of producing general statistics on the conviction information handled in the Member States, such as offences and sanctions, but only to collect the most significant statistical parameters so as to allow the pertinent assessment of ECRIS' efficiency and effectiveness.

	The purpose of the statistics as described in this document **is not** to allow PROFILING analyses for each Member State, such as for example showing how many times a certain type of offence has been perpetrated by persons of a given nationality, or calculating the average levels of the sanctions pronounced by courts of specific Member States. The diffusion/distribution of the ECRIS statistics must therefore be strictly limited to the authorised persons within the central entity and within the Member States' central authorities.

5.2 Procedures

5.2.1 General Process

Considering the expected level of message exchanges between the Member States and the particularities of the monitoring cycle described above, it is foreseen that the ECRIS statistics are produced with a **monthly** and **yearly** frequency according to the nature of each type of statistical indicator. Please note that in the chapter detailing these indicators, such frequency is identified for every proposed technical, functional and business statistic.

As indicated earlier, the collection of statistical data falls within the responsibility of **every Member State's central authority,** the statistical data being the output of the logging procedures implemented at national level. Irrespective to the frequency of producing the statistics (either monthly or yearly) every central authority verifies the correctness of the logging activity and of the automatic, semi-automatic or manual consolidation of collected information.

The **monthly** statistics are to be generated, consolidated and transmitted by the Member States to the central entity for central consolidation **at latest on the 10th working day of every calendar month** that follows the evaluation period.

Since the **yearly** statistics are covering a different time span, and considering that most national criminal records registers calculate national statistics at the end of the calendar year, the information necessary for the production of the yearly statistics should be sent by the Member States to the central entity for central consolidation **by the last working day of January every year**, for the evaluation period covering the previous year. Assuming that the ECRIS software will be operational in April 2012, only the period from April 2012 until end of December 2012 is to be considered for 2012.

Please note that each Member State uses its own calendar for identifying the deadlines for providing the monthly and yearly statistics and that thus certain flexibility needs to be applied for specific situations when this deadline falls in specific days when the consolidated statistics cannot be transmitted (e.g. national holidays, office closing days, etc.).

Also, considering the different volumes of exchanges generated and received by each Member State, the information included in the consolidated statistics is provided in **absolute numbers** rather than percentages so as to offer a correct depiction of the levels of exchanges.

Furthermore, in order to ensure transparency and efficiency, the set of statistical data consolidated at European level is transmitted by the central entity to all contributing Member States at the latest:

§   Monthly statistics: on the last working day of the month in which the national statistics are received (assuming that the national statistics have indeed all been received by the 10th working day of the month);

§   Yearly statistics: at the latest by the end of February each year (assuming that the national statistics have indeed all been received by the end of January)

Considering that these consolidated statistical reports are to be provided to various national experts having different backgrounds and tasks (e.g. management tasks, operational tasks, technical tasks, decision-making tasks, etc.), the central entity should decide on the most appropriate format in which these reports are to be transmitted, preferably also using a non-technical form and structure.

Regarding the specific method used for the transmission of the national statistics from the Member States to the central entity, but also for the transmission of the statistical data consolidated at European level back from the central entity to all contributing Member States, the central entity should use a secure and reliable communication method allowing the diffusion of this statistical information in a safe and timely manner. These communication channels are to be agreed between the central entity and all Member States, and could include for example the usage of a specific and secured e-mailing service or the usage of the CIRCA platform that is currently operated by the European Commission.

Another very important element that needs to be properly underlined is the fact that most statistical indicators are based on the **counting of the number of occurrences** of a particular condition. For such indicators, the counting is to be done by the Member State **both** on the **messages sent** to other Member States as well as on the **received messages**. This applies to all the statistics proposed in chapter 7, at the exception of:

§   The technical indicator "Number of messages received with invalid structure"
→ it is to be counted only from the receiver's perspective.

§   The technical indicator "Number of messages which were evaluated as structurally valid before transmission by the sender but where rejected as structurally invalid from the receiver"
→ it is to be counted only from the sender's perspective**.**

The proposed format for the exchange of statistical data between the Member States' central authorities and the central entity is the XML format, for which the detailed definition and structure is provided together with the current document. Such a format is preferred because it allows easily setting up automated processing and consolidation of the information collected. For a more detailed description of the proposed XML format, please refer to section 6.2.1 "*Exchange Format*".

5.2.2   Consolidation of Statistics

As defined earlier, the statistics are based on **raw data collected** through the logging of various events that occur during the ECRIS information exchanges. This raw data obviously needs to be **consolidated** before any objective conclusions can be drawn. This consolidation consists in grouping all single elements recorded during the monitored period of time and to verify the completeness and correctness of the resulting statistic.

More concretely, this consolidation takes place at two different levels:

§ 1st level: performed at a national level by each central authority, based on the raw data extracted by the logging systems.

§ 2nd level: performed at the European level by the aforementioned central entity, based on the individual statistical data that has been collected in each Member State. At this level all the national statistics are centralised in order to offer a general overview of all the elements pertaining to the ECRIS exchanges. At the same time various comparisons between figures provided by pairs of communicating Member States may be generated in order to evaluate the effectiveness and efficiency of ECRIS and highlight the spotted discrepancies (if any).

Besides the normal frequency for establishing the statistics, it must be noted that for special circumstances, any of these statistics may be consolidated at different intervals or as often as the specific situation require it, for example for supporting specific discussions in the judicial and technical workgroups and the COPEN Working Party. Such exceptional consolidation intervals are to be discussed by the Member States during the judicial and technical workgroups and agreed upon in the COPEN working party meetings.

Notification Messages Sent	MS 2	MS 3	MS 4	MS 14	MS 21	MS 27
MS 1	59	94	14	25	81	145

Table 1 – Example of ECRIS statistics consolidated at national level

The table above illustrates an example of the product of the first level of consolidation of statistical data, produced on national level, and depicting the number of notification messages sent through ECRIS by Member State "1". It shows the values of the aforementioned indicator resulting from its own exchanges of criminal record information in quality of notifying Member State with every Member State with whom it engaged in ECRIS dialogues in the course of the month during which this particular data has been logged.

The output of the second level consolidation of the statistical data, performed by the central entity, is illustrated by the following table:

Notification Messages	Recipient	MS 1			MS 2			MS 3			MS 4			...	MS 27		
Sender																	
MS 1					sender	recipient	Δ	sender	recipient	Δ	sender	recipient	Δ	...	sender	recipient	Δ
					59	59	0	94	92	2	14	14	0		145	146	1
MS 2		sender	recipient	Δ				sender	recipient	Δ	sender	recipient	Δ	...	sender	recipient	Δ
		0	0	0				0	0	0	22	22			2	2	0
MS 3		sender	recipient	Δ	sender	recipient	Δ				sender	recipient	Δ	...	sender	recipient	Δ
		59	59	0	194	104	90				205	205	0		245	245	0
...		...			...			...			...			...	...		
MS 27		sender	recipient	Δ	sender	recipient	Δ	sender	recipient	Δ	sender	recipient	Δ	...			
		21	21	0	5	5	0	41	41	0	49	49	0	...			

Table 2 – Example of ECRIS statistics consolidated at central level

As illustrated in the example above, this degree of consolidation where the entire statistical information is available allows spotting major discrepancies between the figures provided by various Member States. As an example, the reported total number of notifications messages sent by Member State "3" to Member State "2", differs considerably (by 90) from the reported total number of notification messages received by Member State "2" from Member State "3".

5.2.3　Considerations on Collection of Statistical Data

The collection process of statistical data focuses on identifying and collecting the types of information that are most relevant for monitoring ECRIS while insuring that **the protection of personal data rules are fully respected**. Thus, in particular, the statistical information should not provide information that could be used in such a manner that would allow the tracing of the identity of individual persons.

However since person-related parameters like "sex", "date of birth", "place of birth", etc. are obligatory elements in notification messages according to article 11 of the Council Framework Decision 2009/315/JHA, statistics may contain information **related to the number of occurrences of dummy values** for such information elements. While doing so, it must be ensured that the tracing of specific individuals, by association of the various collected person-related elements disclosing the identity of any person, is not possible.

Therefore, collecting only the **number of occurrences** of dummy values used in the personal identification information and consolidating them on a **yearly basis** would **not allow for any type of profiling analysis.** For example, it is not possible with this collected information to count the number of convictions for persons born in 1965, the number of convictions for persons born in a city X, the number of convictions for offences type B committed by males of a certain nationality...etc.

It must be noted also that the collection and consolidation of statistical data analysed in this document focuses only on the processes supported by the ECRIS software – the inter-exchanges of information on criminal records between the Member States' central authorities following a 3-layer approach: technical, functional and business.

In addition to the logging, statistics and monitoring processes described in this analysis, it **may** prove interesting for the Member States and the central entity to consider collecting statistical data also for purposes of analysis of the business processes not supported directly by the ECRIS software, but which influence directly the exchange of criminal records information such as: translation, parts of the matching/identification process, evaluation of the specifics of the identified person, evaluation of the legal terms of the request/of the notified convictions, etc. However, such proposals are out of scope of this document.

6   LOGGING

As already explained earlier in this document, the term "logging" refers to the recording of information related to the ECRIS information exchanges. It has to be noted that logging in this context is not related to the implementation of logging, but merely on the action of collecting information with the aim of later processing it for producing the statistics. Keeping such a perspective allows each Member State to use whichever resources, tools and techniques available, such as application server logging facilities, custom information produced by the ECRIS software, logging information produced by other IT assets such as a workflow engine, etc.

6.1   Purpose

In the context of ECRIS, logging is defined as the activity that records accurate and objective factual information so as to provide the statistics.

6.2   Procedures and Rules

As stated above, a Member State may use all facilities deemed required in order to collect sufficient and accurate information for producing the required statistics. However this analysis focuses on information that can be gathered in an automated manner, without requiring human intervention for collecting the data. The idea pursued in this analysis is that the required information is automatically captured by the ECRIS software during the logging period and the resulting statistics is automatically produced in a predefined format.

For the monthly monitoring frequency, the logging period consists of the elapsed time between time 00:00:00 of the 1st calendar day until time 23:59:59 of the last calendar day of the evaluation month, measured in the **local time** of every Member State. This information is later consolidated in the common *XML* format and delivered to the central entity up until the 10th working day of every month. A Member State can choose freely when this consolidation takes place, as long as the information included is accurate and depicts completely events that took place in the previous calendar month from the first until the last calendar date.

For the yearly frequency, the same logging period is applied for each month, starting at beginning of January and ending at the end of December, thus covering all the months of the evaluated year. The results of the 12 months of logging are simply cumulated for establishing the yearly statistics.

In order to avoid discrepancies in the numbers drawn from the collected information due to time zone differences between two Member States (currently in the EU, the time zones range from GMT to GMT+02:00), the following operational rules are defined and must be observed by all ECRIS software implementations:

§ **No** ECRIS messages are to be transmitted between the Member States **after** time **21:59:59** of the last calendar day of the month and **before** time **02:00:01** of the first calendar day of the month.

§ In the event that a Member State still receives an ECRIS message for which the timestamp indicates that it was sent during the time interval stated above, the receiving ECRIS software directly discards the received message by sending a specific functional error message back to the sender indicating that the message must be sent again during the agreed period of activity (i.e. thus after time 02:00:00 of the first calendar day of the month). In this specific case, both the original message and the functional error message that are sent within this special time interval are not to be counted in the monthly statistics.

The compliance with these operational rules avoids the occurrence of situations where two Member States having different time zones exchange ECRIS messages and log the same information as occurring in two different calendar months. As a consequence, it can be safely assumed that if any discrepancy is further identified in the statistical figures between two Member States, it does not result merely from the differences in the time zones used but it is the result of a different issue that needs to be further investigated.

Regarding retention of statistical information, which is required so as to allow traceability, a Member State must keep the collected logs used for producing the statistics during a period of **at least 12 months** after producing the said statistic. Please note that Member States wishing to keep logs further than that period are free to do so.

In regards to security, please also note that it is recommended that Member States keep access logs, both negative (such as failed access attempts) as well as positive, especially message transmissions that are considered successful (i.e. the receiving host replied with HTTP status code 2xx), in order to appropriately monitor the security of the ECRIS software. It is understood that Member States can potentially employ other means as well in addition to access logs, such as *Network Intrusion Detection Systems* (*NIDS*), in order to monitor ECRIS security and potential breaches. Because the definition of concrete security monitoring implementations goes beyond the scope of the *ECRIS Technical Specifications* project, all these are to be considered as recommendations and are not further elaborated in this document.

6.2.1   Exchange Format

In order to facilitate the processing of the information collected and exchanged, a specific *XML* format is defined for the statistics.

The *XML* format is preferred to other formats, such as MS Excel files, delimited flat text files or similar solutions for producing statistics since it provides a common non-proprietary format for structuring and exchanging information. Furthermore it is easy to generate and process with simple tools such as *XML* authoring tools, *XSLT* style-sheets or small custom applications.

The following files are joined to this document:

§ **statistics-v1.0.xsd:** this *XSD* file defines the data types to be used for composing the XML files to be used for carrying the statistics. It provides the namespace "http://ec.europa.eu/ECRIS/statistics-v1.0" and is an additional technical artefact that has to be managed in the same way as all other technical artefacts of the *ECRIS Technical Specifications*, including the rules for implementing versioning. When creating a new version of the statistics *XSD* schema, the same approach as described in the "Detailed Technical Specifications" document must be followed. Please note that creating a new version of the statistics schema does not lead in creating a new version of the "Detailed Technical Specifications" artefacts. This is true since none of these artefacts directly or indirectly depend on the statistics XSD schema definition. On the other hand, given that the statistics XSD schema depends on schemas provided by the "Detailed Technical Specifications", in particular "commons" and "common-reference-tables", when a new version of these artefacts is created a new version of the statistics XSD schema needs to be created as well.

§ **statistics-definitions-v1.0.xml**: this *XML* file defines the list of types of statistics that are supported. It follows **strictly** the same principles as the common reference tables that are already described in the "Detailed Technical Specifications" document. For each type of statistic, a category code and sub-code is defined.

§ **statistics-sample.xml**: this XML file provides a sample of an XML file containing the statistics consolidated on the national level; it illustrates the expected output from the logging process and providing the consolidated statistical data in the structured XML format.

Please note that the *XML* format is kept very simple, without many restrictions. It remains the responsibility of the implementers to collect and produce the appropriate information for a given statistic based on its definition.

The following figure provides a sample of the definition of the types of statistics:

```xml
<stats:StatisticsDefinitions xmlns:crt="http://ec.europa.eu/ECRIS/common-reference-tables-v1.0"
xmlns:commons="http://ec.europa.eu/ECRIS/commons-v1.0" xmlns:stats="http://ec.europa.eu/ECRIS/statistics-v1.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://ec.europa.eu/ECRIS/statistics-v1.0 statistics-v1.0.xsd">
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of occurrences of
            technical errors (occurrence of i.e. SOAP faults and HTTP errors)
            </commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-T-01-00</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>T-01</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>00</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of messages received
            with invalid structure</commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-T-02-00</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>T-02</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>00</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of messages which were
            rejected by the receiver as being structurally invalid (i.e. number of rejected messages from the sender's vie
            </commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-T-03-00</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>T-03</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>00</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of occurrences of the "remarks"
            property in the "notification" message</commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-F-01-01</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>F-01</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>01</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of occurrences of the "remarks"
            property in the "notification problem" message</commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-F-01-02</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>F-01</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>02</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of occurrences of the "remarks"
            property in the "notification receipt" message</commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-F-01-03</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>F-01</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>03</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
    <stats:StatisticDefinition>
        <crt:ValidFrom>1800-01-01</crt:ValidFrom>
        <crt:ValidTo>2999-12-31</crt:ValidTo>
        <crt:Name>
            <commons:MultilingualTextLinguisticRepresentation languageCode="en">Number of occurrences of the "remarks"
            property in the "request" message</commons:MultilingualTextLinguisticRepresentation>
        </crt:Name>
        <stats:StatisticDefinitionTechnicalIdentifier>STAT-00-F-01-04</stats:StatisticDefinitionTechnicalIdentifier>
        <stats:StatisticDefinitionCategoryCode>F-01</stats:StatisticDefinitionCategoryCode>
        <stats:StatisticDefinitionCategorySubCategoryCode>04</stats:StatisticDefinitionCategorySubCategoryCode>
    </stats:StatisticDefinition>
```

Figure 3 – Sample statistic types' definitions

The "statistics-sample.xml" file provides a sample of an XML file containing the statistics consolidated on the national level:

```xml
<stats:Statistics xsi:schemaLocation="http://ec.europa.eu/ECRIS/statistics-v1.0 statistics-v1.0.xsd" xmlns:stats=
"http://ec.europa.eu/ECRIS/statistics-v1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <stats:StatisticsCreatedOnDate>2001-12-17T09:30:47Z</stats:StatisticsCreatedOnDate>
    <stats:StatisticsLoggedFromTimestamp>2001-12-17T09:30:47Z</stats:StatisticsLoggedFromTimestamp>
    <stats:StatisticsLoggedToTimestamp>2001-12-17T09:30:47Z</stats:StatisticsLoggedToTimestamp>
    <stats:StatisticsProducedByMemberState>RO</stats:StatisticsProducedByMemberState>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-03-11</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:ReceivedFrom>BE</stats:ReceivedFrom>
            <stats:Value>123</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-03-11</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:ReceivedFrom>EE</stats:ReceivedFrom>
            <stats:Value>12345</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-03-02</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:SentTo>CY</stats:SentTo>
            <stats:Value>200</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-03-03</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:SentTo>GB</stats:SentTo>
            <stats:Value>5423</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-03-01</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:SentTo>GB</stats:SentTo>
            <stats:Value>5423</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-B-05-01</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:ReceivedFrom>CZ</stats:ReceivedFrom>
            <stats:Value>3</stats:Value>
        </stats:StatisticRecord>
    </stats:Statistic>
    <stats:Statistic>
        <stats:StatisticID>STAT-00-F-05-00</stats:StatisticID>
        <stats:StatisticRecord>
            <stats:ReceivedFrom>CZ</stats:ReceivedFrom>
            <stats:Value>1</stats:Value>
            <stats:LoggedCategoryValue>PER-3</stats:LoggedCategoryValue>
        </stats:StatisticRecord>
    </stats:Statistic>
```

Figure 4 – Sample statistics (from the "statistics-sample.xml" file)

7 STATISTICAL INDICATORS

This chapter defines the concrete set of indicators to be logged and for which statistics are to be produced by the Member States, split into categories according to the three layers defined earlier in this document.

The statistics are presented in tables indicating, where appropriate:

§ the specific objective that is targeted by the statistic, as defined earlier: effectiveness, performance and compliance

§ the frequency at which they are consolidated, this being either monthly or yearly

Please note that all statistical indicators proposed which reference specific types of ECRIS messages refer systematically to both the "pull" and the "push" implementation of the corresponding *web service* operation; for such indicators the combined usage of both variations are to be logged.

Please note that the statistical indicators presented below are to be provided in the form of **absolute numbers** corresponding exactly to the counting of the condition that is described in each indicator during the exchanges of criminal records information.

Please note also that the resulting numbers provided by each Member State for each statistical indicator in the monthly or yearly reports **must not be interpreted automatically as an assessment of the effectiveness, performance or compliance of a national ECRIS implementation**. This is especially the case for the indicators relating to the of remarks since it may be normal that for some Member States some of these indicators systematically provide very low or very high values, due to national regulations or specific national characteristics. The analysis of the results of the statistical indicators and their assessment is to be done collectively by the appropriate Member States experts.

Furthermore, it is also recommended that the non-binding manual for practitioners includes recommendations for the logging, monitoring and consolidation of statistics, based on the distinct particularities of the 27 Member States so as to allow for a correct and efficient monitoring of ECRIS. As an example, it should indicate such cases where a Member State, due to the provisions of its national legislations, never uses some of the ECRIS information elements and thus systematically report either no or very high figures for the related statistical indicators. Indeed such situations, if properly identified and indicated in the manual, are then not be considered as "worrying" but are expected exceptions which should not trigger specific corrective measures.

7.1 Technical

ID	Statistic	Category			Frequency
		Effectiveness	Performance	Compliance	
T-01	Number of occurrences of technical errors (i.e. SOAP faults and HTTP errors)	X			Monthly
T-02	Number of messages **received** with invalid structure.	X			Monthly
T-03	Number of messages which were rejected by the receiver as being structurally invalid (i.e. number of rejected messages from the **sender's view**)	X			Monthly

7.2   Functional

ID	Statistic	Category			Frequency
		Effectiveness	Performance	Compliance	
F-01	Usage of the "Remarks" field				
F-01.1	Number of occurrences of the "remarks" property in the "notification" message		X		Monthly
F-01.2	Number of occurrences of the "remarks" property in the "notification problem" message		X		Monthly
F-01.3	Number of occurrences of the "remarks" property in the "notification receipt" message		X		Monthly
F-01.4	Number of occurrences of the "remarks" property in the "request" message		X		Monthly
F-01.5	Number of occurrences of the "remarks" property in the "request denial" message		X		Monthly
F-01.6	Number of occurrences of the "remarks" property in the "request deadline" message		X		Monthly
F-01.7	Number of occurrences of the "remarks" property in the "request problem" message		X		Monthly
F-01.8	Number of occurrences of the "remarks" property in the "request response" message		X		Monthly
F-01.9	Number of occurrences of the "remarks" property in the "request additional id info" message		X		Monthly
F-01.10	Number of occurrences of the "remarks" property in the "additional id info" message		X		Monthly
F-01.11	Number of occurrences of the "remarks" property in the "additional id info unavailable" message		X		Monthly
F-01.12	Number of occurrences of the "remarks" property in the "person" entity		X		Monthly
F-01.13	Number of occurrences of the "remarks" property in the "alias" entity		X		Monthly

F-01.14	Number of occurrences of the "remarks" property in the "conviction" entity		X		Monthly
F-01.15	Number of occurrences of the "remarks" property in the "offence" entity		X		Monthly
F-01.16	Number of occurrences of the "remarks" property in the "sanction" entity		X		Monthly
F-01.17	Number of occurrences of the "remarks" property in the "suspension" entity		X		Monthly
F-01.18	Number of occurrences of the "remarks" property in the "interruption" entity		X		Monthly
F-02	Usage of catch-all categories from common reference tables				
F-02.1	Number of occurrences of the catch-all category value "Other" for the "Country" property (value "998-YYY")			X	Yearly
F-02.2	Number of occurrences of the catch-all category value "Unknown" for the "Country" property (value "999-XXX")			X	Yearly
F-02.3	Number of occurrences of catch-all category value "No currency" for the "Currency" property (value "999-XXX")			X	Yearly
F-02.4	Number of occurrences of the catch-all category value "Other Offences" for the "Offence Category" property (value "2700-00")			X	Yearly
F-02.5	Number of occurrences of the catch-all category value "Other Intentional Offences" for the "Offence Category" property (value "2701-00")			X	Yearly
F-02.6	Number of occurrences of the catch-all category value "Other Unintentional Offences" for the "Offence Category" property (value "2702-00")			X	Yearly
F-02.7	Number of occurrences of catch-all category for "Sanction Category" (value "12000 Other penalties and measures")			X	Yearly
F-02.8	Number of occurrences of catch-all category value "002-000 – Request for			X	Yearly

	non-criminal proceeding" for the "Purpose of Request" property				
F-02.9	Number of occurrences of catch-all category value "003-000 Request for employment vetting" for the "Purpose of Request" property			X	Yearly
F-03	Usage of dummy values for obligatory information inside notification messages				
F-03.1	Number of occurrences of dummy value for the forename of the convicted person (i.e. occurrences of "UNKNOWN" value)			X	Yearly
F-03.2	Number of occurrences of dummy value for the surname of the convicted person (i.e. occurrences of "UNKNOWN" value)			X	Yearly
F-03.3	Number of occurrences of dummy value for the birth date of the convicted person (i.e. occurrences of "1800-01-01" value)			X	Yearly
F-03.4	Number of occurrences of dummy value for the birth country of the convicted person (i.e. occurrences of "999-XXX-Unknown" value)			X	Yearly
F-03.5	Number of occurrences of dummy value for the birth town name of the convicted person (i.e. occurrences of "UNKNOWN" value)			X	Yearly
F-03.6	Number of occurrences of dummy value for the sex of the convicted person (i.e. occurrences of "0" value)			X	Yearly
F-03.7	Number of occurrences of dummy value for the nationalities of the convicted person (i.e. occurrences of "999-XXX-Unknown" value)			X	Yearly
F-03.8	Number of occurrences of dummy value for the conviction's decision date (only for the conviction and not for the subsequent decisions carrying changes, thus only occurrences of the value "1800-01-01" in the "Decision Date" field of the "Conviction" entity)			X	Yearly
F-03.9	Number of occurrences of			X	Yearly

ID	Statistic	Effectiveness	Performance	Compliance	Frequency
	dummy value for the convicting authority name (only for the conviction and not for the subsequent decisions carrying changes, thus only occurrences of the value "UNKNOWN" in the "Deciding Authority Name" field of the "Conviction" entity)			AL/mvk	
F-03.10	Number of occurrences of dummy value for the conviction's final decision date (only for the initial conviction and not for the subsequent decisions carrying changes, thus only occurrences of the value "1800-01-01" in the "Final Decision Date" field of the "Conviction" entity)			X	Yearly
F-03.11	Number of occurrences of dummy value for the start date of the offence (i.e. occurrences of "1800-01-01" value)			X	Yearly
F-03.12	Number of occurrences of dummy value for the applicable legal provisions in relation to the offence (i.e. occurrences of "UNKNOWN" value)			X	Yearly
F-04	Number of occurrences of each category of request purpose			X	Yearly
F-05	Number of occurrences of functional errors per type[1]			X	Monthly

7.3   Business

ID	Statistic	Category Effectiveness	Performance	Compliance	Frequency
B-01	Total number of notification problem messages per cause				
B-01.1	Total number of "notification problem" messages having the cause "person is not a national of the Member State"	X			Monthly
B-01.2	Total number of "notification problem" messages having the cause "person deceased"	X			Monthly

[1] The detailed list of functional errors and error conditions is defined in section 5.2 "Functional Validation Rules" of the "Detailed Technical Specifications" document.

B-01.3	Total number of "notification problem" messages having the cause "fingerprints do not match the nominal identity information"	X			Monthly
B-02	Total number of request problem messages per cause				
B-02.1	Total number of "request problem" messages having the cause "person is not a national of the Member State"	X			Monthly
B-02.2	Total number of "request problem" messages having the cause "person deceased"	X			Monthly
B-02.3	Total number of "request problem" messages having the cause "fingerprints do not match the nominal identity information"	X			Monthly
B-02.4	Total number of "request problem" messages having the cause "multiple persons found"	X			Monthly
B-03	Total number of messages per type				
B-03.1	Total number of "notification" messages	X			Monthly
B-03.2	Total number of "notification" messages bearing new convictions (i.e. notifications which have no relation to a previously transmitted conviction)	X			Monthly
B-03.3	Total number of "notification" messages bearing changes to previously transmitted convictions (i.e. notifications which have a conviction to conviction relation)	X			Monthly
B-03.4	Total number of "notification problem" messages	X			Monthly
B-03.5	Total number of "notification receipt" messages	X			Monthly
B-03.6	Total number of "request" messages	X			Monthly
B-03.7	Total number of "request denial" messages	X			Monthly
B-03.8	Total number of "request deadline" messages	X			Monthly

B-03.9	Total number of "request problem" messages	X			Monthly
B-03.10	Total number of "request response" messages	X			Monthly
B-03.11	Total number of "request response" messages containing no convictions	X			Monthly
B-03.12	Total number of "request response" messages containing one or more convictions	X			Monthly
B-03.13	Total number of "request additional identification information" messages	X			Monthly
B-03.14	Total number of "additional identification information" messages	X			Monthly
B-03.15	Total number of "additional identification information unavailable" messages	X			Monthly
B-04	Number of deadlines for responses not honoured				
B-04.1	Number of occurrences of deadline not being honoured for "request response" messages (i.e. it includes both cases where the "request response" message has been received after the deadline and where it has not been received at all)			X	Monthly
B-04.2	Number of occurrences of "notification problem" and "notification receipt" messages transmitted after the operational deadline of 30 days (it does **not** include cases where the "notification problem/receipt" messages have not been received at all)		X		Monthly
B-05	Total number of requests concerning third country nationals				
B-05.1	Total number of "request" messages concerning third country nationals, i.e. instances where the nationality does not include any of the following values: 040 AUT, 056 BEL, 100 BGR, 196 CYP, 200 CSK, 203 CZE, 276 DEU, 208 DNK, 233 EST, 724 ESP, 246 FIN, 250 FRA, 826 GBR, 300 GRC, 348 HUN, 380 ITA, 440 LTU, 442 LUX, 428 LVA, 470 MLT,	X			Yearly

	528 NLD, 616 POL, 620 PRT, 642 ROU, 752 SWE, 705 SVN, 703 SVK, 995 ZZZ (stateless)			AL/mvk	
B-05.2	Total number of "request response" messages concerning third country nationals, counted for all request response messages transmitted as a reply for the request messages concerning third country nationals.	X			Yearly
B-06	Total number of requests concerning stateless persons				
B-06.1	Total number of "request" messages concerning stateless persons, i.e. instances where the nationality property contains the value 995 ZZZ (stateless)	X			Yearly
B-06.2	Total number of "request response" messages relating to stateless persons, counted for all request response messages transmitted as a reply for request messages concerning stateless persons	X			Yearly

8   DISCARDED STATISTICAL INDICATORS

The following section describes the various technical, functional and business statistics indicator proposals that **have been discarded** as a result of (1) the feedback provided by the Member States experts through the written comments regarding the ECRIS "Logging, Monitoring and Statistics proposals" document and (2) the agreements reached during the Expert Group Review meeting on 01 December 2010 and the COPEN Working Party meeting on 10 December 2010.

For each proposal, the original description is provided as well as the main reasoning that led to discard the proposal.

8.1   Technical

ID	Statistic	Reason for discarding
1	Connectivity issues (i.e. requested host is unreachable)	Due to the fact that these proposals relate to technical errors that occur synchronously on the web service calls, it could be difficult for some implementers to identify in such a detailed manner the cause of the technical error thrown by the application, especially since some or all of these cases are likely to be handled automatically by the underlying implementation of application servers or web service implementations which are not custom built for ECRIS.

All these indicators have been merged into a single one: T01 |
2	Request time-outs (i.e. requested host was reachable but did not answer in a timely fashion so as to start the transmission)	
3	Response time-outs (i.e. the requested host answered properly, the transmission took place but the host did not answer in a timely fashion with any of the HTTP status codes or any of the appropriate synchronous messages)	
4	Server Certificate used does not include all the information described as required in the "Security Analysis" chapter 6.1.2.	
5	HTTPS client had to drop the connection due to a breach of the HTTPS implementation as it is described in RFC 2818 chapter "§3.1 Server Identity"	
6	In case messages are send in batches (i.e. messages that were queued by the software implementation and transmitted in the same time frame), average size and time required to transmit the batch per message type	In the ECRIS "Technical Architecture" document, batch sending capabilities for the exchanges of *XML* messages have been discarded for the first version of the ECRIS software.

Since this statistical indicator is relating to batch processing, it must also be discarded. |
7	Average size of messages sent/received in Kb	In the Expert Group Review meeting on 01 December 2010 and in the COPEN Working Party meeting on 10 December 2010 the representatives of the Member States agreed to not use these statistical indicators.
8	Average time required to perform a complete message transmission (i.e. the time required to send a message, after it is created and structurally validated from the sender), per type of message, in milliseconds	
8.1	Average time (in milliseconds) for	

	sending a "notification" message	
8.2	Average time (in milliseconds) for sending a "request" message	
8.3	Average time (in milliseconds) for sending a "request response" message.	

8.2 Functional

ID	Statistic	Reason for discarding
1	Usage of specific optional properties and entities	In the Expert Group Review meeting on 01 December 2010 and in the COPEN Working Party meeting on 10 December 2010 the representatives of the Member States agreed to not use these statistical indicators.
1.1	Number of occurrences of the "case reference number" property in the "request" message	
1.2	Number of occurrences of the "urgency" property in the "request" message	
1.3	Number of occurrences of the "full name" property in the "person" entity	
1.4	Number of occurrences of the "former forename" property in the "person" entity	
1.5	Number of occurrences of the "former surname" property in the "person" entity	
1.6	Number of occurrences of the "identity number" property in the "person" entity	
1.7	Number of occurrences of the "fingerprints" property in the "person" entity	
1.8	Number of occurrences of "alias" in the "person" entity	
1.9	Number of occurrences of "identification document" in the "person" entity	
1.10	Number of occurrences of the "country subdivision" property in the "place" entity	
1.11	Number of occurrences of the "town code" property in the "place" entity	
1.12	Number of occurrences of the "full address" property in the "address" entity	
1.13	Number of occurrences of the "convicting country" property in the "conviction" entity in "request response" messages	
1.14	Number of occurrences of the "non-criminal ruling" property in the "conviction" entity in the "notification" message	

1.15	Number of occurrences of the "retention period end date" property in the "conviction" entity in "notification" messages	
1.16	Number of occurrences of the "delete after retention period" property in the "conviction" entity in "notification" messages	
1.17	Number of occurrences of the "transmittable" property in the "conviction" entity in "notification" messages	
1.18	Number of occurrences of the "number of occurrences" property in the "offence" entity in "notification" messages	
1.19	Number of occurrences of the "level of completion" property in the "offence" entity in "notification" messages	
1.20	Number of occurrences of the "level of participation" property in the "offence" entity in "notification" messages	
1.21	Number of occurrences of the "recidivism" property in the "offence" entity in "notification" messages	
2	Number of occurrences of each offence category marked as "open" in the Annex A of the Council Framework Decision 2009/315/JHA	In the Expert Group Review meeting on 01 December 2010 and in the COPEN Working Party meeting on 10 December 2010 the representatives of the Member States agreed to not count the occurrences of each open categories for offences and sanctions but to only keep the indicators on the generic open categories of offences and sanctions (F-02.4, F-02.5, F-02.6 and F-02.7).
3	Number of occurrences of each sanction category marked as "open" in the Annex B of the Council Framework Decision 2009/315/JHA	
4.1	Number of occurrences of the "remarks" property in the "sanction change" entity	The "Sanction Change" and "Conviction Change" entity have been removed from the domain model in the Business Analysis.
4.2	Number of occurrences of the "remarks" property in the "conviction change" entity	

8.3   Business

ID	Statistic	Reason for discarding
1	Average time required to complete a business process (start-end)	The collection and consolidation of these items was considered to be too complicated since it requires in many cases too much manual intervention. Also, the information produced by collecting this type of information was considered not to be related directly to the exchanges of information between Member States, but rather to specific internal practices and
2	Average time required per step of business process	
3	Correlation of "Name" structure used and success in identification process	
4	Number of times an individual was uniquely identified	

5	Number of times there were more than one or none individuals identified	implementation particularities.
6	Average number of iterations performed so that an individual was identified, in case additional information was required	
7	Number of times the additional information property was used to transmit information that normally should appear as structured information	
8	Errors in searching of person due to incomplete information	In the Expert Group Review meeting on 01 December 2010 and in the COPEN Working Party meeting on 10 December 2010 the representatives of the Member States agreed to replace these indicators by new statistical indicators related to specific notification/request responses (indicators B-01 and B-02).
8.1	Number of occurrences of errors in searching of person due to incomplete information in "notification" message	
8.2	Number of occurrences of errors in searching of person due to incomplete information in "request" message	
9	Problems in searching of person due to errors or ambiguities in the information	
9.1	Number of occurrences of problem in searching of person due to error or ambiguity in the information in "notification" message	
9.2	Number of occurrences of problem in searching of person due to error or ambiguity in the information in "request" message	

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