

CARA2 - WP2 - Gap Analysis of the metadata of the structured radiological report

François Wisniewski

Version 1.0
12.01.2012

CR SANTEC

Project	CARA2		
Work Package	WP2 -Gap Analysis of the metadata of the structured radiological report		
Project Manager		Andreas Jahnen	andreas.jahnen@tudor.lu
Author	FWi	François Wisniewski	francois.wisniewski@tudor.lu

List of Dissemination

Name	Organisation	Email	For validation	For comment	For info
Carlo Back	Direction de la Santé	carlo.back@ms.etat.lu		X	
Natasha Jerusalem	Direction de la Santé	natasha.jerusalem@ms.etat.lu		X	
René KRIPPES	Direction de la Santé	rene.krippes@ms.etat.lu	X		
Jean-Charles Dron	Health Management Solutions	jcdrone@hms-france.com	X		
Dr. Stefan Benzschawel	CRP Henri Tudor	stefan.benzschawel@tudor.lu			X
Hanan Bouzid	CRP Henri Tudor	hanan.bouzid@tudor.lu		X	
François Wisniewski	CRP Henri Tudor	francois.wisniewski@tudor.lu		X	
Claude Poupart	CRP Henri Tudor	claudio.poupart@tudor.lu			X
Dr. Jürgen Homann	Inspection Générale de la Sécurité Sociale	juergen.Hohmann@igss.etat.lu			X
Stephanie Heuschling	Center Hospitalier du Nord	stephanie.heuschling@chdn.lu			X
Daniel Scharztz	Center Hospitalier du Nord	daniel.scharztz@chdn.lu			X
Michel Gilson	Center Hospitalier du Nord	michel.gilson@chdn.lu,			X
Manuel Manrique	Fondation François-Elisabeth	manuel.manrique@ffe.lu			X
Laurent Berna	Fondation François-Elisabeth	laurent.berna@ffe.lu			X
Paolo Sana	Fondation François-Elisabeth	paolo.sana@ffe.lu			X
Roland Schoepp	Fondation François-Elisabeth	roland.schoepp@ffe.lu			X
Bernard Schreiner	Zitha Klinik	bernard.schreiner@zitha.lu			X
Arnaud Sztantics	Zitha Klinik	arnaud.sztantics@zitha.lu			X
Christophe Nardin	Entente des Hopitaux Luxembg.	christophe.nardin@ehl.lu			X
Serge Frieden	Entente des Hopitaux Luxembg.	serge.frieden@ehl.lu			X
Valérie Boissart	Centre Hospitalier Luxembg.	boissart.valerie@chl.lu			X
Robert Bertinelli	Centre Hospitalier Luxembg.	bertinelli.robert@chl.lu			X
Emmanuel Ponnet	Centre Hospitalier Luxembg.	ponnet.emmanuel@chl.lu			X
Roland Kuffer	Centre Hospitalier Emile Mayrisch	roland.kuffer@chem.lu			X
Mike Moes	Centre Hospitalier Emile Mayrisch	mike.moes@chem.lu			X

Goal of the Document

This document is a comparison between the metadata requirements of the structured radiological report for the eSanté-CARA project and the current state of practice concerning metadata usage for the RIS/PACS systems in Luxembourgish hospitals.

It assesses the ability of the RIS/PACS systems to provide this metadata to the future eSanté platform and reports the gap that needs to be closed by every actor involved in the process in order to achieve the new target.

State of the Document

The information contained in this document reflects the status of the ongoing work within the eSanté-CARA project. It compares metadata availability from the “WP09 - Description of Existing RIS/PACS”, with required data from the “WP2 - Proposition de normalisation de la structure et du contenu du compte-rendu radiologique”.

This document will be useful to propose a standardised header for the structured radiological report.

Change History

Version	Date	Author	Modification
0.1	12/12/2011	FWi	Initial draft
0.2	13/12/2011	FWi	Structure and hospital information
0.3	14/12/2011	FWi	Summary and Conclusion
0.4	14/12/2011	Hbo, GBo	Proof reading
0.5	28/12/2011	JCD, RK	Comments
0.6	28/12/2011	Fwi	Medical data section deleted, orientation more metadata than data, new conclusion
1.0	12/01/2012	Fwi	Integration of RK's comments. Ready for publication.

Table of Contents

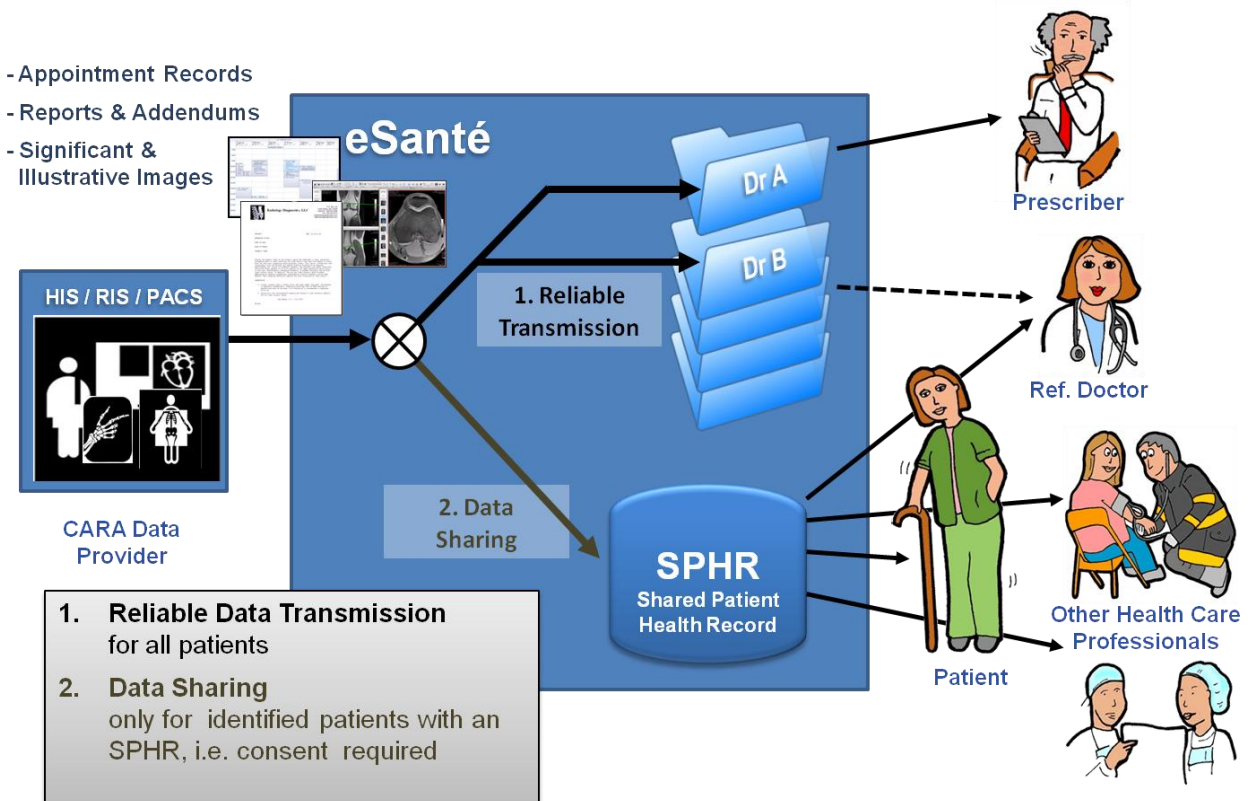
CR SANTEC	2
Goal of the Document	3
Table of Contents	4
§1 Introduction	5
§2 Metadata requirements	7
§2.1 Language	7
§2.2 Data identifying the patient	7
§2.3 Exam information	8
§2.4 Medical data	12
§2.5 Report information	13
§3 Assessment rules for the gap analysis	15
§4 Centre Hospitalier Emile Mayrisch (CHEM)	16
§4.1 Language	16
§4.2 Data identifying the patient	16
§4.3 Exam information	17
§4.4 Report information	19
§5 Centre Hospitalier du Nord (CHdN)	20
§5.1 Language	20
§5.2 Data identifying the patient	20
§5.3 Exam information	21
§5.4 Report information	23
§6 Centre Hospitalier Luxembourgeois (CHL)	24
§6.1 Language	24
§6.2 Data identifying the patient	24
§6.3 Exam information	25
§6.4 Report information	27
§7 Fondation François-Elisabeth / Hôpital Kirchberg (FFE)	28
§7.1 Language	28
§7.2 Data identifying the patient	28
§7.3 Exam information	29
§7.4 Report information	31
§8 Zitha Klinik (ZK)	32
§8.1 Language	32
§8.2 Data identifying the patient	32
§8.3 Exam information	33
§8.4 Report information	35
§9 Summary	36
§9.1 Language	36
§9.2 Data identifying the patient	36
§9.3 Exam information	37
§9.4 Report information	39
§10 Conclusion	40
Glossary of terms	42
Bibliography	44

§1 Introduction

The aim of the eSanté-CARA project is to study and establish the basic functional and technical requirements for an IT system to share medical radiology data (reports and images) between the main actors of the Luxemburgish public health system, i.e. hospital radiology departments, doctors and patients. The outcome so far is that a centralized, government provided platform for the reliable and secure storage and exchange of medical patient data, called eSanté, will be the preferred solution.

The eSanté platform will provide the general framework for data sharing and transmission of medical data, in this case radiology relevant data. There are two basic functions that this platform has to achieve:

1. **Reliable Data Transmission:** The platform will guarantee the secure delivery of medical data to all Health Care Professionals (HCPs) who have been designated to receive it.
2. **Data Sharing:** The platform should build, over time, a secure record of medical data for identifiable patients, and allow those data to be shared with and managed by HCPs that are involved in those patients' health care.



The present document aims to estimate how far away the actual metadata used in the individual hospitals' radiology departments [[CARA2 WP9 Description RIS/PACS](#)] are away from metadata requirements [[CRRS Template 1.04](#)] of the structured radiological report.

The following hospitals are included in the study:

1. Centre Hospitalier Emile Mayrisch (CHEM)
2. Centre Hospitalier du Nord (CHdN)
3. Centre Hospitalier Luxembourgeois (CHL)
4. Fondation François-Elisabeth / Hôpital Kirchberg (FFE)
5. Zitha Klinik (ZK)

The CHL and the Zitha Klinik are the pilot sites for the first eSanté-CARA implementations.

Structure of the document

Chapter §2 introduces the metadata requirements of the structured radiological report.

Chapters §3 explains how the gap assessment has been performed.

Chapters §4 to §8 contain the detailed GAP analysis for all the five hospitals in Luxemburg, giving ratings between 0% (no gap) and 100% (maximal gap) for each metadata requirement, while Chapter §9 summarizes the results from all hospitals in one single table.

Chapter §10 concludes the present GAP Analysis.

A Glossary of terms, which defines the meaning of specific terms used in this document, is added at the end of the document, as well as a Bibliography with references to related documents. [Hyperlinks](#) into the Glossary and Bibliography are provided throughout the text whenever appropriate. Use Ctrl-Left-Mouse-Click to jump to the definition in the glossary. Type Alt← (left arrow) to jump back.

If you view the document with MS-Word consider to activate Bookmark visibility (Word Options → Advanced → Show document content → Show Bookmarks). With the bookmarks **highlighted** in the text, it becomes easier to use them for navigation - same as with the glossary entries.

§2 Metadata requirements

This chapter describes the metadata requirements determined in the « WP2 - Proposition de normalisation de la structure et du contenu du compte-rendu radiologique » [CRRS Template 1.04]. To remain faithful to the document of origin, we kept the same structure of the data presentation. The “Medical data” section is introduced for information only as it is not metadata.

§2.1 Language

This level 0 concerns only the language of the report.

Field	Comment	Mandatory / Recommend	Conditional	Source
Language of the report				RIS

§2.2 Data identifying the patient

This section lists the metadata required to enable a safe identification of the patient.

Field	Comment	Mandatory / Recommend	Conditional	Source
Last name of patient		M		HIS
Maiden name of patient	Name at birth	R	If married	HIS
First name of patient		M		HIS
Patient ID	Patient ID inside the institution that perform the exam	M		HIS
Patient matricule	CNS number	R		HIS
Nationality				HIS
Date of birth				HIS
Sex of patient				HIS
Address of patient		M		HIS
• Street		M		HIS
• Street Number		M		HIS
• Additional information		M		HIS
• Zip code		M		HIS
• Locality		M		HIS
• Country		M		HIS
Patient status at the time of examination	Inpatient / outpatient			HIS

§2.3 Exam information

This section lists the metadata required to describe the examination performed.

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
Prescriber		M		Prescription
• Last name		M		Prescription
• First name		M		Prescription
• Specialty		M		Prescription
• ID physician		M		Prescription
• CNS Code		M		Prescription
• Address		M		Prescription or public phone book
• Phone		M		Prescription or public phone book
• Fax		M		Prescription or public phone book
• GSM		M		Prescription or public phone book
• email		M		Prescription or public phone book
• BIP		M		Prescription or public phone book
• Institution		M		Prescription or public phone book
• Institution address		M		Prescription or public phone book
Date of prescription		M		Prescription
Reference prescription		M		RIS
Date of the appointment		M		Admission (HIS)
Another recipient Doctor				Prescription
• Last name				Prescription
• First name				Prescription
• Specialty				Prescription
• ID physician				Prescription
• CNS Code				Prescription
• Address				Prescription or public phone book
• Phone				Prescription or public

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
• Fax				phone book Prescription or public phone book
• GSM				Prescription or public phone book
• email				Prescription or public phone book
• BIP				Prescription or public phone book
• Institution				Prescription
• Institution address				Prescription
• 2 nd BIP				Prescription
• 2 nd Institution				Prescription
• 2 nd Institution address				Prescription
Emergency	Yes / No			Prescription
Justification of the emergency			If urgent	Prescription
Title of the exam(s) performed	Can be created from the concatenation of other information: type of examination, modality, body part, etc	M		RIS
Type of exam(s) required by the prescriber		R		Prescription
Justification of substitution of the exam	Short justification of the substitution by the radiologist to the required exam. Put if consensus with the prescriber has been found.		If substituted	RIS
Technique	Short description, highlighting the important points (standardized protocols available) Optional in the first phase, required for some technique later Type of acquisition: spiral, sequences, etc	R (M later)		RIS
Device and modality used	DICOM convention	M		RIS

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
• Brand	DICOM convention	M		RIS
• Type	DICOM convention	M		RIS
• Starting date	DICOM convention	M		RIS
• N° accreditation	DICOM convention	M		RIS
Contrast product administered		M		RIS
• Brand		M		RIS
• Dose	Concentration	M		RIS
• Volume		M		RIS
• Lot number		M		RIS
• Route of administration		M		RIS
• Incidents related to the use of contrast product	Treatment and measures taken (Dose histamine and tryptase, allergy consultation)	M		RIS
Rx dose	For CT: CTDIvol, PDL For conventionnal radiology: DAP or PDS	M		RIS
Body part examined	Field of DICOM standard to use	M		RIS
Laterality		M	Unless not applicable	RIS
Administration		M		RIS
• Sedation	Yes / no	R		RIS
• Anesthesia	General / local	R		RIS
Illustrative image References	In common with the use of "Key image note"	M later		RIS
Meaningful image References	Significant image	M later		RIS
Patient informed consent	<ul style="list-style-type: none"> • Yes / no • Who gave consent when a minor, guardian • Reference document of consent • Access to the consent document 	R		RIS
Exam reference	Number of passage, exam number	M		RIS
Date of the exam	Day	M		RIS
Time of the exam	Hour	R		RIS
Institution which performed the exam	The institution ID is to define	M		
• Denomination		M		
• Identifier		M		

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
• CNS code		M		
• Address		M		

§2.4 Medical data

This section lists for information only the data required to describe the clinical information related to the exam.

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
Clinical indications				
<ul style="list-style-type: none"> clinical information with any history 	Summarize the clinical problem for which the exam(s) has been requested. Include completely all information provided by the prescriber.	M		Prescription
<ul style="list-style-type: none"> any contraindications (allergies, implants, pacemaker, pregnancy, ...) 		M		Prescription
Comparison with a previous exam				
<ul style="list-style-type: none"> Previous exam reference 				
<ul style="list-style-type: none"> Date of the previous exam 				
<ul style="list-style-type: none"> Institution which performed the previous exam 				
Results	Analytical description of the observed images <ul style="list-style-type: none"> Systematic study of abnormal images, starting with the data targeted by the indication, complete description of the semiology Clear and unambiguous term Topographic data References ("cutting sequence x y z). Report elements can influence the outcome (associated with the technique, the patient, ...) No abbreviations, no comparison to various objects. Precise: measurements of diameters, area, volume, density, signal, echogenicity, behaviour following the injection of contrast product or medication...	M		

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
Differential Diagnosis	Wherever possible, including the main diagnosis determined	R		
Summary and conclusion	Remind accidents or incidents, limitations of the exam. Discuss the problem (confrontation with available non-radiological and other radiological data) and come to the conclusion (no redundancy with § Result). The conclusion must try to answer the question: to offer a diagnosis or a hierarchical range of diagnoses (by specifying the positive and negative arguments in favour of each hypothesis and classifying them by severity, frequency or probability). Suggestion of a prudent course of action possible (investigations, monitoring, ...). If multiple exams performed, provide a coherent information. Possible reaction to a given product. The conclusions are always short and can be formatted the same way.	M		
Additional tests and inspections	The type of complementary exploration assessed necessary by the radiologist and the delay to control anomalies			
Remarks				
Addendum	Optional: additional text after the validation report			
Additional information subsequent to the validation of report	Optional: e.g. CR anapath, microbiology, cytology, etc.			

§2.5 Report information

This section lists the metadata required to describe the report itself, this is mainly metadata in fact.

Field	Comment	<u>Mandatory / Recommend</u>	Conditional	Source
Urgent communication of the result by phone				RIS
• To whom				RIS
• Date and time				RIS
Copy of the report to the patient				RIS
Physician (s) Radiologist (s) author of report		M		RIS
• Last name		M		RIS
• First name		M		RIS
• ID physician		M		RIS
• CNS Code		M		RIS
• Address		M		RIS
• Phone		M		RIS
• Fax		M		RIS
• GSM		M		RIS
• Email		M		RIS
• BIP		M		RIS
• Institution		M		RIS
• Institution address		M		RIS
Date of the report		M		RIS
Time of the report		R		RIS
Signature		M		RIS

§3 Assessment rules for the gap analysis

In order to have a fair and a reliable assessment, the value of the gap of each metadata requirement has been determined according to the table below:

Data requirements		Data availability		Gap value
<u>M</u> andatory <u>R</u> ecommended		<u>A</u> lways <u>S</u> ometimes <u>N</u> ever		
M		A		0%
M		S		50%
M		N		100%
M		-		?
R		A		0%
R		S		25%
R		N		50%
R		-		?
-		A		N/A
-		S		N/A
-		N		N/A
-		-		N/A

When the metadata requirement was not mandatory or recommended the assessment of the gap for this metadata requirement was considered as not applicable and noted "N/A".
If the information on the data usage in the hospital was missing, a "?" shows that it was not possible to assess the gap.

§4 Centre Hospitalier Emile Mayrisch (CHEM)

This chapter compares the data requirements of the structured radiological report to the data available in the radiology department of the CHEM. This detailed GAP analysis gives finally ratings between 0% (no gap) and 100% (maximal gap) for each data requirement.

§4.1 Language

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Report language		N	N/A

§4.2 Data identifying the patient

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Last name of patient	M	A	0%
Maiden name of patient	R	A	0%
First name of patient	M	A	0%
Patient ID	M	A	0%
Patient matricule	R	A	0%
Nationality		A	N/A
Date of birth		A	N/A
Sex of patient		A	N/A
Address of patient	M	A	0%
• Street	M	A	0%
• Street Number	M	A	0%
• Additional information	M	S	50%
• Zip code	M	A	0%
• Locality	M	A	0%
• Country	M	A	0%
Patient status at the time of examination		N	N/A

§4.3 Exam information

Field	Data requirements		Data availability		Gap
	<u>M</u> andatory/ <u>R</u> ecommended		<u>A</u> lways <u>S</u> ometimes <u>N</u> ever		
Prescriber	M		A		0%
• Last name	M		A		0%
• First name	M		A		0%
• Specialty	M		S		50%
• ID physician	M		A		0%
• CNS Code	M		S		50%
• Address	M		S		50%
• Phone	M		S		50%
• Fax	M		S		50%
• GSM	M		N		100%
• email	M		N		100%
• BIP	M		N		100%
• Institution	M		N		100%
• Institution address	M		N		100%
Date of prescription	M		S		50%
Reference prescription	M		N		100%
Date of the appointment	M		S		50%
Another recipient Doctor			S		N/A
• Last name			A		N/A
• First name			A		N/A
• Specialty			S		N/A
• ID physician			A		N/A
• CNS Code			S		N/A
• Address			S		N/A
• Phone			S		N/A
• Fax			S		N/A
• GSM			N		N/A
• email			N		N/A
• BIP			N		N/A
• Institution			N		N/A
• Institution address			N		N/A
• 2 nd BIP			N		N/A

• 2 nd Institution		N	N/A
• 2 nd Institution address		N	N/A
Urgent		S	N/A
Justification of the emergency		N	N/A
Title of the exam(s) performed	M	A	0%
Type of exam(s) required by the prescriber	R	N	50%
Justification of substitution of the exam		N	N/A
Technique	R (M later)		?
Device and modality used	M	A	0%
• Brand	M	N	100%
• Type	M	N	100%
• Starting date	M	N	100%
• N° accreditation	M	N	100%
Contrast product administered	M	S	50%
• Brand	M	N	100%
• Dose	M	N	100%
• Volume	M	S	50%
• Lot number	M	N	100%
• Incidents related to the use of contrast product	M	N	100%
• Route of administration	M	N	100%
Rx dose	M	N	100%
Body part examined	M	A	0%
Laterality	M	A	0%
Administration	M	S	50%
• Sedation	R	N	50%
• Anaesthesia	R	N	50%
Illustrative image References	M later	S	50%
Meaningful image References	M later	N	100%
Patient informed consent	R	N	50%
Exam reference	M	A	0%
Date of the exam	M	A	0%
Time of the exam		A	N/A
Institution which performed the exam	M	A	0%
• Denomination	M	A	0%

• Identifier	M	S	50% ¹
• CNS code	M	S	50%
• Address	M	S	50%

§4.4 Report information

Field	Data requirements		Data availability	
		<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Urgent communication of the result by phone			N	N/A
• To whom			N	N/A
• Date and time			N	N/A
Copy of the report to the patient			N	N/A
Physician (s) Radiologist (s) author of report	M		A	0%
• Last name	M		A	0%
• First name	M		A	0%
• ID physician	M		A	0%
• CNS Code	M		A	0%
• Address	M		A	0%
• Phone	M		A	0%
• Fax	M		S	50%
• GSM	M		S	50%
• email	M		S	50%
• BIP	M		S	50%
• Institution	M		A	0%
• Institution address	M		A	0%
Date of the report	M		A	0%
Time of the report	R		A	0%
Signature	M		A	0%

¹ It is surprising to have information here as no national identifier for institution has been defined. So hospital may have created a local Institution ID or misunderstood the question.

§5 Centre Hospitalier du Nord (CHdN)

This chapter compares the data requirements of the structured radiological report to the data available in the radiology department of the CHdN. This detailed GAP analysis gives finally ratings between 0% (no gap) and 100% (maximal gap) for each data requirement.

§5.1 Language

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Report language		N	N/A

§5.2 Data identifying the patient

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Last name of patient	M	A	0%
Maiden name of patient	R	A	0%
First name of patient	M	A	0%
Patient ID	M	A	0%
Patient matricule	R	A	0%
Nationality		N	N/A
Date of birth		A	N/A
Sex of patient		N	N/A
Address of patient	M	A	0%
• Street	M	A	0%
• Street Number	M	A	0%
• Additional information	M	N	100%
• Zip code	M	A	0%
• Locality	M	A	0%
• Country	M	A	0%
Patient status at the time of examination		N	N/A

§5.3 Exam information

Field	Data requirements		Data availability	
	Mandatory/ Recommended	Always Sometimes Never	Gap	
Prescriber	M	A	0%	
• Last name	M	A	0%	
• First name	M	A	0%	
• Specialty	M	N	100%	
• ID physician	M	A	0%	
• CNS Code	M	A	0%	
• Address	M	A	0%	
• Phone	M	A	0%	
• Fax	M	A	0%	
• GSM	M	N	100%	
• email	M	N	100%	
• BIP	M	N	100%	
• Institution	M	A	0%	
• Institution address	M	A	0%	
Date of prescription	M	A	0%	
Reference prescription	M	A	0%	
Date of the appointment	M	N	100%	
Another recipient Doctor		A	N/A	
• Last name		A	N/A	
• First name		A	N/A	
• Specialty		A	N/A	
• ID physician		N	N/A	
• CNS Code		N	N/A	
• Address		N	N/A	
• Phone		N	N/A	
• Fax		N	N/A	
• GSM		N	N/A	
• email		N	N/A	
• BIP		N	N/A	
• Institution		N	N/A	
• Institution address		N	N/A	
• 2 nd BIP		N	N/A	

• 2 nd Institution		N	N/A
• 2 nd Institution address		N	N/A
Urgent		N	N/A
Justification of the emergency		N	N/A
Title of the exam(s) performed	M	A	0%
Type of exam(s) required by the prescriber	R	A	0%
Justification of substitution of the exam		A	N/A
Technique	R (M later)		?
Device and modality used	M	N	100%
• Brand	M	N	100%
• Type	M	N	100%
• Starting date	M	N	100%
• N° accreditation	M	N	100%
Contrast product administered	M	A	0%
• Brand	M	N	100%
• Dose	M	N	100%
• Volume	M	A	0%
• Lot number	M	N	100%
• Incidents related to the use of contrast product	M	N	100%
• Route of administration	M	A	0%
Rx dose	M	N	100%
Body part examined	M	A	0%
Laterality	M	A	0%
Administration	M	A	0%
• Sedation	R	A	0%
• Anaesthesia	R	A	0%
Illustrative image References	M later	A	0%
Meaningful image References	M later	N	100%
Patient informed consent	R	S	25%
Exam reference	M	N	100%
Date of the exam	M	A	0%
Time of the exam		N	N/A
Institution which performed the exam	M	A	0%
• Denomination	M	A	0%

• Identifier	M	A	0% ²
• CNS code	M	A	0%
• Address	M	A	0%

§5.4 Report information

Field	Data requirements		Data availability	
		<u>Mandatory/Recommended</u>	<u>Always Sometimes Never</u>	Gap
Urgent communication of the result by phone			S	N/A
• To whom			S	N/A
• Date and time			N	N/A
Copy of the report to the patient			N	N/A
Physician (s) Radiologist (s) author of report	M		A	0%
• Last name	M		A	0%
• First name	M		A	0%
• ID physician	M		A	0%
• CNS Code	M		A	0%
• Address	M		A	0%
• Phone	M		A	0%
• Fax	M		A	0%
• GSM	M		N	100%
• email	M		N	100%
• BIP	M		N	100%
• Institution	M		A	0%
• Institution address	M		A	0%
Date of the report	M		A	0%
Time of the report	R		N	50%
Signature	M		A	0%

² It is surprising to have information here as no national identifier for institution has been defined. So hospital may have created a local Institution ID or misunderstood the question.

§6 Centre Hospitalier Luxembourgeois (CHL)

This chapter compares the data requirements of the structured radiological report to the data available in the radiology department of the CHL. This detailed GAP analysis gives finally ratings between 0% (no gap) and 100% (maximal gap) for each data requirement.

§6.1 Language

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Report language		N	N/A

§6.2 Data identifying the patient

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Last name of patient	M	A	0%
Maiden name of patient	R	S	25%
First name of patient	M	A	0%
Patient ID	M	A	0%
Patient matricule	R	A	0%
Nationality		N	N/A
Date of birth		A	N/A
Sex of patient		A	N/A
Address of patient	M	A	0%
• Street	M	A	0%
• Street Number	M	A	0%
• Additional information	M	N	100%
• Zip code	M	A	0%
• Locality	M	A	0%
• Country	M	A	0%
Patient status at the time of examination		A	N/A

§6.3 Exam information

Field	Data requirements		Data availability	
	Mandatory/ Recommended	Always Sometimes Never	Gap	
Prescriber	M	A	0%	
• Last name	M	A	0%	
• First name	M	A	0%	
• Specialty	M	A	0%	
• ID physician	M	N	100%	
• CNS Code	M	A	0%	
• Address	M	A	0%	
• Phone	M	N	100%	
• Fax	M	N	100%	
• GSM	M	N	100%	
• email	M	N	100%	
• BIP	M	N	100%	
• Institution	M	N	100%	
• Institution address	M	N	100%	
Date of prescription	M	S	50%	
Reference prescription	M		?	
Date of the appointment	M	A	0%	
Another recipient Doctor		A	N/A	
• Last name		A	N/A	
• First name		A	N/A	
• Specialty		A	N/A	
• ID physician		N	N/A	
• CNS Code		A	N/A	
• Address		A	N/A	
• Phone		N	N/A	
• Fax		N	N/A	
• GSM		N	N/A	
• email		N	N/A	
• BIP		N	N/A	
• Institution		N	N/A	
• Institution address		N	N/A	
• 2 nd BIP		N	N/A	

• 2 nd Institution		N	N/A
• 2 nd Institution address		N	N/A
Urgent		N	N/A
Justification of the emergency		N	N/A
Title of the exam(s) performed	M	S	50%
Type of exam(s) required by the prescriber	R	A	0%
Justification of substitution of the exam		N	N/A
Technique	R (M later)		?
Device and modality used	M	N	100%
• Brand	M	N	100%
• Type	M	N	100%
• Starting date	M	N	100%
• N° accreditation	M	N	100%
Contrast product administered	M	N	100%
• Brand	M	A	0%
• Dose	M	A	0%
• Volume	M	N	100%
• Lot number	M	N	100%
• Incidents related to the use of contrast product	M	N	100%
• Route of administration	M	N	100%
Rx dose	M	S	50%
Body part examined	M	N	100%
Laterality	M	A	0%
Administration	M	N	100%
• Sedation	R	A	0%
• Anaesthesia	R	A	0%
Illustrative image References	M later	N	100%
Meaningful image References	M later	N	100%
Patient informed consent	R	N	50%
Exam reference	M	A	0%
Date of the exam	M	A	0%
Time of the exam		A	N/A
Institution which performed the exam	M	A	0%
• Denomination	M	A	0%

• Identifier	M	N	100%
• CNS code	M	N	100%
• Address	M	N	100%

§6.4 Report information

Field	Data requirements		Data availability	
		<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Urgent communication of the result by phone			N	N/A
• To whom			N	N/A
• Date and time			N	N/A
Copy of the report to the patient			N	N/A
Physician (s) Radiologist (s) author of report	M		S	50% ³
• Last name	M		S	50% ⁴
• First name	M		S	50% ⁵
• ID physician	M		N	100%
• CNS Code	M		N	100%
• Address	M		N	100%
• Phone	M		N	100%
• Fax	M		N	100%
• GSM	M		N	100%
• email	M		N	100%
• BIP	M		N	100%
• Institution	M		N	100%
• Institution address	M		N	100%
Date of the report	M		S	50% ⁶
Time of the report	R		S	25% ⁷
Signature	M		N	100%

³ It is surprising that the *Radiologist author of the report* is not always known by the hospital, this response should be validated by the CHL.

⁴ It is surprising that the *Last Name of the radiologist* is not always known by the hospital, this response should be validated by the CHL.

⁵ It is surprising that the *First Name of the radiologist* is not always known by the hospital, this response should be validated by the CHL.

⁶ It is surprising that the *Date of the report* is not always known by the hospital, this response should be validated by the CHL.

⁷ We can assume that *Time of the report* is not always now. Comparing the gap for *Date* and for the *Time of the report*, we obtained a smaller gap size for *Time* because of the calculation methodology (see §3). Requirement for the *Date* has been set up *Mandatory* and the requirement for the *Time* is *Recommended*.

§7 Fondation François-Elisabeth / Hôpital Kirchberg (FFE)

This chapter compares the data requirements of the structured radiological report to the data available in the radiology department of the FFE. This detailed GAP analysis gives finally ratings between 0% (no gap) and 100% (maximal gap) for each data requirement.

§7.1 Language

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Report language		N	N/A

§7.2 Data identifying the patient

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Last name of patient	M	A	0%
Maiden name of patient	R	A	0%
First name of patient	M	A	0%
Patient ID	M	A	0%
Patient matricule	R	N	50%
Nationality		N	N/A
Date of birth		A	N/A
Sex of patient		N	N/A
Address of patient	M	N	100%
• Street	M	N	100%
• Street Number	M	N	100%
• Additional information	M	N	100%
• Zip code	M	N	100%
• Locality	M	N	100%
• Country	M	N	100%
Patient status at the time of examination		N	N/A

§7.3 Exam information

Field	Data requirements		Data availability	
	Mandatory/ Recommended	Always Sometimes Never	Gap	
Prescriber	M	A	0%	
• Last name	M	A	0%	
• First name	M	A	0%	
• Specialty	M	N	100%	
• ID physician	M	N	100%	
• CNS Code	M	N	100%	
• Address	M	A	0%	
• Phone	M	N	100%	
• Fax	M	N	100%	
• GSM	M	N	100%	
• email	M	N	100%	
• BIP	M	N	100%	
• Institution	M	N	100%	
• Institution address	M	N	100%	
Date of prescription	M	N	100%	
Reference prescription	M	N	100%	
Date of the appointment	M	N	100%	
Another recipient Doctor		N	N/A	
• Last name		N	N/A	
• First name		N	N/A	
• Specialty		N	N/A	
• ID physician		N	N/A	
• CNS Code		N	N/A	
• Address		N	N/A	
• Phone		N	N/A	
• Fax		N	N/A	
• GSM		N	N/A	
• email		N	N/A	
• BIP		N	N/A	
• Institution		N	N/A	
• Institution address		N	N/A	
• 2 nd BIP		N	N/A	

• 2 nd Institution		N	N/A
• 2 nd Institution address		N	N/A
Urgent		N	N/A
Justification of the emergency		N	N/A
Title of the exam(s) performed	M	A	0%
Type of exam(s) required by the prescriber	R	N	50%
Justification of substitution of the exam		N	N/A
Technique	R (M later)		?
Device and modality used	M	N	100%
• Brand	M	N	100%
• Type	M	N	100%
• Starting date	M	N	100%
• N° accreditation	M	N	100%
Contrast product administered	M	N	100%
• Brand	M	S	50%
• Dose	M	S	50%
• Volume	M	S	50%
• Lot number	M	N	100%
• Incidents related to the use of contrast product	M	N	100%
• Route of administration	M	S	50%
Rx dose	M	S	50%
Body part examined	M	S	50%
Laterality	M	N	100%
Administration	M	N	100%
• Sedation	R	S	25%
• Anaesthesia	R	S	25%
Illustrative image References	M later	N	100%
Meaningful image References	M later	S	50%
Patient informed consent	R	N	50%
Exam reference	M	N	100%
Date of the exam	M	A	0%
Time of the exam		A	N/A
Institution which performed the exam	M	N	100%
• Denomination	M	N	100%

• Identifier	M	N	100%
• CNS code	M	N	100%
• Address	M	N	100%

§7.4 Report information

Field	Data requirements		Data availability		Gap
		<u>Mandatory/Recommended</u>	<u>Always</u> <u>Sometimes</u> <u>Never</u>		
Urgent communication of the result by phone			S		N/A
• To whom			N		N/A
• Date and time			N		N/A
Copy of the report to the patient			N		N/A
Physician (s) Radiologist (s) author of report		M	A		0%
• Last name		M	A		0%
• First name		M	A		0%
• ID physician		M	N		100%
• CNS Code		M	N		100%
• Address		M	N		100%
• Phone		M	N		100%
• Fax		M	N		100%
• GSM		M	N		100%
• email		M	N		100%
• BIP		M	N		100%
• Institution		M	N		100%
• Institution address		M	N		100%
Date of the report		M	A		0%
Time of the report		R	A		0%
Signature		M	A		0%

§8 Zitha Klinik (ZK)

This chapter compares the data requirements of the structured radiological report to the data available in the radiology department of the ZK. This detailed GAP analysis gives finally ratings between 0% (no gap) and 100% (maximal gap) for each data requirement.

§8.1 Language

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Report language		A	N/A

§8.2 Data identifying the patient

Data requirements		Data availability	
Field	<u>M</u> andatory/ <u>R</u> ecommended	<u>A</u> lways <u>S</u> ometimes <u>N</u> ever	Gap
Last name of patient	M	A	0%
Maiden name of patient	R	A	0%
First name of patient	M	A	0%
Patient ID	M	A	0%
Patient matricule	R	A	0%
Nationality		A	N/A
Date of birth		A	N/A
Sex of patient		A	N/A
Address of patient	M	A	0%
• Street	M	A	0%
• Street Number	M	A	0%
• Additional information	M	A	0%
• Zip code	M	A	0%
• Locality	M	A	0%
• Country	M		?
Patient status at the time of examination		A	N/A

§8.3 Exam information

Field	Data requirements		Data availability	
	Mandatory/ Recommended	Always Sometimes Never	Gap	
Prescriber	M	A	0%	
• Last name	M	A	0%	
• First name	M	A	0%	
• Specialty	M	A	0%	
• ID physician	M	A	0%	
• CNS Code	M	A	0%	
• Address	M	A	0%	
• Phone	M	A	0%	
• Fax	M	A	0%	
• GSM	M	A	0%	
• Email	M	A	0%	
• BIP	M	A	0%	
• Institution	M	A	0%	
• Institution address	M	A	0%	
Date of prescription	M	A	0%	
Reference prescription	M	A	0%	
Date of the appointment	M	A	0%	
Another recipient Doctor		A	N/A	
• Last name		A	N/A	
• First name		A	N/A	
• Specialty		A	N/A	
• ID physician		A	N/A	
• CNS Code		A	N/A	
• Address		A	N/A	
• Phone		A	N/A	
• Fax		N	N/A	
• GSM		N	N/A	
• Email		A	N/A	
• BIP		A	N/A	
• Institution		N	N/A	
• Institution address		A	N/A	
• 2 nd BIP		A	N/A	

• 2 nd Institution		A	N/A
• 2 nd Institution address		A	N/A
Urgent		A	N/A
Justification of the emergency		A	N/A
Title of the exam(s) performed	M	N	100%
Type of exam(s) required by the prescriber	R	N	50%
Justification of substitution of the exam		N	N/A
Technique	R (M later)		?
Device and modality used	M	S	50%
• Brand	M	N	100%
• Type	M	N	100%
• Starting date	M	A	0%
• N° accreditation	M	A	0%
Contrast product administered	M	A	0%
• Brand	M	A	0%
• Dose	M	N	100%
• Volume	M		?
• Lot number	M	A	0%
• Incidents related to the use of contrast product	M	A	0%
• Route of administration	M	A	0%
Rx dose	M	S	50%
Body part examined	M	A	0%
Laterality	M	A	0%
Administration	M	A	0%
• Sedation	R	N	50%
• Anaesthesia	R	N	50%
Illustrative image References	M later	A	0% ⁸
Meaningful image References	M later	A	0% ⁹
Patient informed consent	R	A	0%
Exam reference	M	A	0%
Date of the exam	M	A	0%
Time of the exam		A	N/A
Institution which performed the	M	A	0%

⁸ The PACS of ZK has the capacity to select Illustrative image, nevertheless this feature is not used by radiologist of ZK

⁹ The PACS of ZK has the capacity to select Meaningful image, nevertheless this feature is not used by radiologist of ZK

exam			
• Denomination	M	A	0%
• Identifiant	M	A	0% ¹⁰
• CNS code	M	N	100%
• Address	M	N	100%

§8.4 Report information

Field	Data requirements		Data availability	
	Mandatory/ Recommended	Always Sometimes Never	Gap	
Urgent communication of the result by phone		A	N/A	
• To whom			N/A	
• Date and time		A	N/A	
Copy of the report to the patient		S	N/A	
Physician (s) Radiologist (s) author of report	M	A	0%	
• Last name	M	A	0%	
• First name	M	A	0%	
• ID physician	M	A	0%	
• CNS Code	M	A	0%	
• Address	M	A	0%	
• Phone	M	A	0%	
• Fax	M	A	0%	
• GSM	M		?	
• Email	M	A	0%	
• BIP	M	A	0%	
• Institution	M	A	0%	
• Institution address	M	A	0%	
Date of the report	M	A	0%	
Time of the report	R	N	50%	
Signature	M	N	100%	

¹⁰ It is surprising to have information here as no national identifier for institution has been defined. So hospital may have created a local Institution ID or misunderstood the question.

§9 Summary

The following tables shows an overview of the data requirement gaps between eSanté and the hospitals, which have been analyzed in detail in the Chapters §4 to §8 above. All metadata requirements considered as not applicable “N/A” were removed from the tables and from the average gap calculation made at the end of each table. If no information was provided by the hospital (‘?’) the value is excluded from the average calculation, too. The last column is an indication of the average of the gap for all hospitals.

§9.1 Language

Only the ZK has a metadata about the language of the report.

§9.2 Data identifying the patient

Data requirements	Gap					Mean
	CHEM	CHdN	CHL	FFE	ZK	
Last name of patient	0%	0%	0%	0%	0%	0%
Maiden name of patient	0%	0%	25%	0%	0%	5%
First name of patient	0%	0%	0%	0%	0%	0%
Patient ID	0%	0%	0%	0%	0%	0%
Patient matricule	0%	0%	0%	50%	0%	10%
Address of patient	0%	0%	0%	100%	0%	20%
• Street	0%	0%	0%	100%	0%	20%
• Street Number	0%	0%	0%	100%	0%	20%
• Additional information	50%	100%	100%	100%	0%	70%
• Zip code	0%	0%	0%	100%	0%	20%
• Locality	0%	0%	0%	100%	0%	20%
• Country	0%	0%	0%	100%	?	25%
Average Gap	4%	8%	10%	63%	0%	17%

§9.3 Exam information

Data requirements	Gap					
	CHEM	CHdN	CHL	FFE	ZK	Mean
Prescriber	0%	0%	0%	0%	0%	0%
• Last name	0%	0%	0%	0%	0%	0%
• First name	0%	0%	0%	0%	0%	0%
• Specialty	50%	100%	0%	100%	0%	50%
• ID physician	0%	0%	100%	100%	0%	40%
• CNS Code	50%	0%	0%	100%	0%	30%
• Address	50%	0%	0%	0%	0%	10%
• Phone	50%	0%	100%	100%	0%	50%
• Fax	50%	0%	100%	100%	0%	50%
• GSM	100%	100%	100%	100%	0%	80%
• email	100%	100%	100%	100%	0%	80%
• BIP	100%	100%	100%	100%	0%	80%
• Institution	100%	0%	100%	100%	0%	60%
• Institution address	100%	0%	100%	100%	0%	60%
Date of prescription	50%	0%	50%	100%	0%	40%
Reference prescription	100%	0%	?	100%	0%	50%
Date of the appointment	50%	100%	0%	100%	0%	50%
Title of the exam(s) performed	0%	0%	50%	0%	100%	30%
Type of exam(s) required by the prescriber	50%	0%	0%	50%	50%	30%
Technique	?	?	?	?	?	
Device and modality used	0%	100%	100%	100%	50%	70%
• Brand	100%	100%	100%	100%	100%	100%
• Type	100%	100%	100%	100%	100%	100%
• Starting date	100%	100%	100%	100%	0%	80%
• N° accreditation	100%	100%	100%	100%	0%	80%
Contrast product administered	50%	0%	100%	100%	0%	50%
• Brand	100%	100%	0%	50%	0%	50%
• Dose	100%	100%	0%	50%	100%	70%
• Volume	50%	0%	100%	50%	?	50%
• Lot number	100%	100%	100%	100%	0%	80%
• Incidents related to the use of contrast product	100%	100%	100%	100%	0%	80%
• Route of administration	100%	0%	100%	50%	0%	50%

Data requirements	Gap					
	CHEM	CHdN	CHL	FFE	ZK	Mean
Rx dose	100%	100%	50%	50%	50%	70%
Body part examined	0%	0%	100%	50%	0%	30%
Laterality	0%	0%	0%	100%	0%	20%
Administration	50%	0%	100%	100%	0%	50%
• Sedation	50%	0%	0%	25%	50%	25%
• Anaesthesia	50%	0%	0%	25%	50%	25%
Illustrative image References	50%	0%	100%	100%	0%	50% ¹¹
Meaningful images Reference	100%	100%	100%	50%	0%	70% ¹¹
Patient informed consent	50%	25%	50%	50%	0%	35%
Exam reference	0%	100%	0%	100%	0%	40%
Date of the exam	0%	0%	0%	0%	0%	0%
Institution which performed the exam	0%	0%	0%	100%	0%	20%
• Denomination	0%	0%	0%	100%	0%	20%
• Identifier	50%	0%	100%	100%	0%	50% ¹²
• CNS code	50%	0%	100%	100%	100%	70%
• Address	50%	0%	100%	100%	100%	70%
Average Gap	55%	37%	59%	74%	18%	49%

¹¹ This value have to be taken with precaution, we are not sure that concept of *Illustrative* and *Meaningful image* has been understood by all hospitals.

¹² It is supprinsing to have information here as no national identifier for institution has been defined. So hospitals may have created a local Institution ID or misunderstood the question.

§9.4 Report information

Data requirements	Gap					
	CHEM	CHdN	CHL	FFE	ZK	Mean
Physician (s) Radiologist (s) author of report	0%	0%	50% ¹³	0%	0%	10%
• Last name	0%	0%	50% ¹⁴	0%	0%	10%
• First name	0%	0%	50% ¹⁵	0%	0%	10%
• ID physician	0%	0%	100%	100%	0%	40%
• CNS Code	0%	0%	100%	100%	0%	40%
• Address	0%	0%	100%	100%	0%	40%
• Phone	0%	0%	100%	100%	0%	40%
• Fax	50%	0%	100%	100%	0%	50%
• GSM	50%	100%	100%	100%	?	88%
• email	50%	100%	100%	100%	0%	70%
• BIP	50%	100%	100%	100%	0%	70%
• Institution	0%	0%	100%	100%	0%	40%
• Institution address	0%	0%	100%	100%	0%	40%
Date of the report	0%	0%	50% ¹⁶	0%	0%	10%
Time of the report	0%	50%	25%	0%	50%	25%
Signature	0%	0%	100%	0%	100%	40%
Average Gap	13%	22%	83%	63%	10%	38%

¹³ It is surprising that the *Radiologist author of the report* is not always known by the hospital, this reponse should be validated by the CHL.

¹⁴ It is surprising that the *Last Name of the radiologist* is not always known by the hospital, this reponse should be validated by the CHL.

¹⁵ It is surprising that the *First Name of the radiologist* is not always known by the hospital, this reponse should be validated by the CHL.

¹⁶ It is surprising that the *Date of the report* is not always known by the hospital, this reponse should be validated by the CHL.

§10 Conclusion

In order to enable the data exchange with the eSanté platform, a minimal structure of the exchanged report is required. This report structure makes the information understandable by all systems of the various stakeholders and usable for anonymous statistics. This metadata gap analysis aims to raise the hospitals' awareness of the basic requirements for the metadata in the structured radiological report and to show individual hospitals where they stand in respect with those requirements. Alternatively the results presented in the document can be used by the hospitals to close their own individual metadata gaps in respect with the eSanté platform.

Unfortunately the analysis has only been based on quantitative aspects such as presence of the metadata required in the RIS/PACS or even HIS and could not address qualitative aspects. Nevertheless some metadata will have to be standardised by the usage of a common terminology in order to guarantee a semantic interoperability (properly interpretation of the information communicated by the receiving system in the same sense as intended by the transmitting system).

As summarised in chapter §9, this report shows quite clearly the data gap between hospitals and the future eSanté platform specifically for the metadata related to exam information for the CHL and the FFE.

We listed as a conclusion the metadata that have an average gap among all hospitals strictly below the 50% in the chapter §9. This list should support the agence eSanté to set up a standardised header for the CDA document of the structured radiological report and enable first exchange in CDA level 1.

Data identifying the patient

- Last name of patient
- Maiden name of patient
- First name of patient
- Patient ID
- Patient matricule
- Address of patient
 - Street
 - Street Number
 - Zip code
 - Locality
 - Country

Exam information

- Prescriber
 - Last name
 - First name
 - ID physician
 - CNS Code
 - Address
- Date of prescription
- Title of the exam(s) performed
- Type of exam(s) required by the prescriber
- Body part examined
- Laterality

- Patient informed consent
- Exam reference
- Date of the exam
- Institution which performed the exam
 - Denomination

Report information

- Physician (s) Radiologist (s) author of report
 - Last name
 - First name
 - ID physician
 - CNS Code
 - Address
 - Phone
 - Institution
 - Institution address
- Date of the report
- Time of the report
- Signature

Glossary of terms

Wherever [hyperlinks](#) are provided in the text you can jump directly to the glossary entry with a simple click in the PDF document, or using Control + Click in MS-Word.

Term	Description
Demographic Patient Data	Usually the term “demographic” applies to all data that can be used to characterize a population. These types of data are used widely in sociology, public policy, and marketing. Commonly used demographics include gender, race, age, disabilities, mobility (in terms of travel time to work or number of vehicles available), home ownership, employment status, and even location. eSanté deals only with part of these data, and its prime usage is the unique → identification of patients . A secondary usage is health statistics, which is more in line with the original meaning of the term “demographics”.
DICOM	Digital Imaging and Communications in Medicine is a standard for handling, storing, printing, and transmitting information in medical imaging. It includes a file format definition and a network communications protocol. The communication protocol is an application protocol that uses TCP/IP to communicate between systems. DICOM files can be exchanged between two entities that are capable of receiving image and patient data in DICOM format. DICOM enables the integration of scanners, servers, workstations, printers, and network hardware from multiple manufacturers into a picture archiving and communication system (PACS). The different devices come with DICOM conformance statements which clearly state the DICOM classes they support. DICOM has been widely adopted by hospitals and is making inroads in smaller applications like dentists' and doctors' offices.
Document Sharing	→ XDS
eSanté platform	The centralized, government provided platform for the reliable and secure storage and exchange of medical patient data in Luxemburg. Its main purpose is to store medical data related to patients in the Luxemburgish health care system, and to facilitate the secure and controlled exchange of data among its different actors, such as hospitals, doctors and patients. Beside data storage and transfer services the eSanté platform will provide other related services such as a Notification Service , Patient Consent Management etc.
HCP	Health Care Professionals are professionals that work in the health care sector, such as doctors, nurses, midwives, medical assistants, Samu, etc. Each registered HCP has his own Incoming Folder in eSanté in order to be able to receive documents directly sent to him through the reliable transmission channel.
HIS	Hospital Information Systems are comprehensive, integrated information systems designed to manage the medical, administrative, financial and legal aspects of a hospital and its service processing. Traditional approaches

Term	Description
	encompass paper-based information processing as well as resident work position and mobile data acquisition and presentation.
Metadata	<p>Or <i>Meta-Information</i>. A document is composed of two kinds of information:</p> <ul style="list-style-type: none"> • actual radiology data such as reports and images, which are also called <i>document content</i>, and • metadata, e.g. the patient, date and time of creation, Title, short description, modality, author, etc. <p>Metadata is very useful for searching documents. Typically a user will query the Document Registry for matching metadata, and then he can retrieve the document content from the Document Repository.</p>
PACS	<p>Picture Archiving and Communication System, is used in the healthcare sector mainly as an electronic archive for the storage and retrieval of digital images from multiple modalities (source machine types), e.g. CT and MR. Electronic images and reports are transmitted digitally via PACS; this eliminates the need to manually file, retrieve, or transport film jackets. The universal format for PACS image storage and transfer is DICOM.</p>
Reliable Transmission	→ XDR
RIS	<p>A Radiology Information System is a computerized database used by radiology departments to store, manipulate and distribute patient radiological data and imagery. The system generally consists of patient tracking and scheduling, result reporting and image tracking capabilities. The RIS complements a HIS and often a PACS which is critical to efficient workflow to radiology practices.</p>
SPHR	<p>A SPHR or Shared Patient Health Record is an electronic health record for individuals that is located on the eSanté platform, and which can be viewed by anyone who has the necessary electronic credentials to access this information. An ideal SPHR would provide a complete and accurate summary of the health and medical history of a person by gathering data from many sources.</p>
XDR	<p>Short for Cross-Enterprise Document Reliable Interchange. XDR is an IHE profile that provides document interchange using a reliable messaging system. This permits direct document interchange between healthcare IT systems in the absence of a permanent document sharing infrastructure such as XDS.</p> <p>In the case of eSanté XDR will be implemented using the XDS infrastructure (Registry, Repository)</p> <p>See http://wiki.ihe.net/index.php?title=XDR.</p>
XDS, XDS.b	<p>Short for Cross-Enterprise Document Sharing. XDS is an IHE profile that focuses on providing a standards-based specification for managing the sharing of documents between any healthcare enterprise, ranging from a private physician office to a clinic to an acute care in-patient facility and personal health record systems. This is managed through federated document repositories and a document registry to create a longitudinal record of information about a patient within a given clinical affinity domain.</p>

Term	Description
	<p>The Cross-Enterprise Document Sharing-b (XDS.b) supplement provides a new implementation choice for the Cross-Enterprise Document Sharing (XDS) Integration Profile based on a use of the Web Services and ebXML Reg/Rep standards that is consistent with the current developments and best practices in the industry.</p> <p>See http://wiki.ihe.net/index.php?title=Cross-Enterprise_Document_Sharing</p>
XDS-I.b	<p>Cross-enterprise Document Sharing for Imaging (XDS-I.b) extends XDS to share images, diagnostic reports and related information across a group of care sites. XDS-I.b provides a solution for publishing, finding and retrieving imaging documents across a group of affiliated enterprises.</p> <p>Affiliated Enterprises such as radiology departments, private physicians, clinics, long term care, and acute care centers can contribute and access imaging documents of interest.</p> <p>Imaging documents include:</p> <ul style="list-style-type: none"> • Imaging studies (images, measurements, results from analysis packages, presentation states); • Diagnostic reports for imaging studies; • Key Image selections associated with the report content for their diagnostic significance. <p>See http://wiki.ihe.net/index.php?title=Cross-enterprise_Document_Sharing_for_Imaging</p>

Bibliography

Reference	Title	Author	Version/Date
CARA2 WP9 Description RIS/PACS	eSanté-CARA WP9 Description des infrastructures RIS/PACS des hôpitaux du Luxembourg	CRP Henri Tudor, SANTEC	1.0 June 01,2011
CRRS Template 1.04	WP2 - Proposition de normalisation de la structure et du contenu du compte-rendu radiologique	Ministry of Health	1.04