Integrating the Healthcare Enterprise

IHE Radiology (RAD)
Technical Framework

Volume 4
IHE RAD TF-4
National Extensions

Revision 16.0 – Final Text

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1 Introduction

160 Integrating the Healthcare Enterprise (IHE) is an initiative to promote the use of standards to achieve interoperability of health information technology (HIT) systems and effective use of electronic health records (EHRs). IHE provides a forum for volunteer committees of care providers, HIT experts and other stakeholders in several clinical and operational domains to reach consensus on standards-based solutions to critical interoperability issues. IHE publishes the

165 implementation guides they produce (called *IHE profiles*), first to gather public comment and then for trial implementation by HIT vendors and other system developers.

IHE provides a process for developers to test their implementations of IHE profiles, including regular testing events called Connectathons. After a committee determines that a profile has undergone sufficient successful testing and deployment in real-world care settings, it is

170 incorporated in the appropriate IHE Technical Framework, of which the present document is a volume. The Technical Frameworks provide a unique resource for developers and users of HIT systems: a set of proven, standards-based solutions to address common interoperability issues and support the convenient and secure use of EHRs.

Purchasers can specify conformance with appropriate IHE profiles as a requirement in requests

175 for proposal. Vendors who have successfully implemented IHE profiles in their products can publish conformance statements (called IHE Integration Statements) in the IHE Product Registry (http://ihe.net/IHE_Product_Registry).

The current versions of this and all IHE Technical Framework documents are available at http://ihe.net/Technical_Frameworks. Comments may be submitted at

180 http://www.ihe.net/Radiology_Public_Comments.

IHE domain committees are responsible for developing and publishing Technical Framework documents. This document is published by the IHE Radiology committees. Information on the activities of this domain, including its committee rosters and how to participate, is available at http://wiki.ihe.net/index.php?title=Domains.

185 General information about IHE, including its governance structure, sponsorship, member organizations and work process, is available at www.ihe.net.

1.1 Overview of Technical Framework

An IHE Technical Framework describes use cases requiring interoperability of HIT systems and defines functional components (called IHE actors) of these systems. Using established standards,

190 they specify the actions and interactions of these actors, including the content objects they produce and exchange. Volume 1 of the Radiology Technical Framework provides high-level overviews of each profile, the use case it addresses and the actors involved. Volumes 2 and 3 provide detailed specifications of each transaction and other technical requirements. The current document, Volume 4, describes national extensions to the IHE Radiology Technical Framework.

1.2 Overview of Volume 4

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Volume 4 contains information about the scope of national extensions to the transactions defined in the IHE Radiology Technical Framework. Section 2 describes the permitted scope of national extensions and the process by which national IHE initiatives can propose such extensions for approval by the IHE Radiology Technical Committee and documentation in the IHE Radiology Technical Framework. Sections 3 through 9 provide the sets of national extensions that have thus far been approved by IHE: those from France, Germany, United States, Italy, United Kingdom, Canada, and Spain.

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2 Overview of National Extensions to the Technical Framework

The goal of IHE is to promote implementation of standards-based solutions to improve workflow and access to information in support of optimal patient care. To that end, IHE encourages the development of IHE National Deployment Committees to address issues specific to local health systems, policies and traditions of care. The role of these organizations and information about how they are formed is available at http://ihe.net/Governance/#National_Deployment.

2.1 Scope of National Extensions

National extensions to the IHE Technical Framework are allowed in order to address specific local healthcare needs and promote the implementation of the IHE Technical Frameworks. They may add (though not relax) requirements that apply to the Technical Framework generally or to specific transactions, actors and integration profiles. Some examples of appropriate national extensions are:

- Require support of character sets and national languages
- Provide translation of IHE concepts or data fields from English into other national languages
- Extensions of patient or provider information to reflect policies regarding privacy and confidentiality
- Changes to institutional information and financial transactions to conform to national health system payment structures and support specific local care practices

All national extensions shall include concise descriptions of the local need they are intended to address. They shall identify the precise transactions, actors, integration profiles and sections of the Technical Framework to which they apply. And they must provide technical detail equivalent to that contained in the Technical Framework in describing the nature of the extension.

2.2 Process for Developing National Extensions

National extension documents are to be developed, approved and incorporated in the Technical Framework in coordination with the IHE Technical Committee and its annual cycle of activities in publishing and maintaining the Technical Framework. The first prerequisite for developing a national extension document is to establish a national IHE initiative and make information regarding its composition and activities available to other IHE initiatives.

Established IHE national initiatives may draft a document describing potential national extensions containing the general information outlined above and similar in form to those found in sections 4-6 of the current document. They submit this draft document to the IHE Technical Committee for review and comment. Based on discussion with the Technical Committee, they prepare and submit finalized version of the document in appropriate format for incorporation into the Technical Framework. The publication of National Extensions is to be coordinated with the annual publication cycle of other Technical Framework documents in the relevant domain. The annual cycle for Radiology is available at http://wiki.ihe.net/index.php?title=Radiology.

2.3 Process for Proposing Revisions to the Technical Framework

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In addition to developing national extension documents to be incorporated in the Technical Framework, national IHE initiatives may also propose revisions to the global Technical Framework. These may take the form of changes to existing transactions, actors or integration profiles or the addition of new ones. Such general changes would be subject to approval by the IHE Technical and Planning Committees.

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Changes that are minor in scope, such as suggestions for clarifications or corrections to documentation, may be submitted throughout the year via the ongoing errata tracking process. Comments on this document may be submitted at http://www.ihe.net/Radiology_Public_Comments.

More substantial revision proposals, such as proposals to add new integration profiles, should be submitted directly to the IHE Technical and Planning Committees. The initial submission of such proposed revisions to the global Technical Framework should be a 1-2 page white paper containing:

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- A description of the clinical need addressed by the proposed revision with appropriately detailed use cases

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- An overview of the proposed technical approach for meeting this clinical need, including the established standards to be used

- Any known constraints to the proposed solution (e.g., maturity of standards or necessity of regulatory compliance)

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- An estimate of the level of effort for developing and implementing the proposed solution

The IHE Planning and Technical Committees will give due consideration to all such revision proposals received from national IHE initiatives and will notify their originators of their disposition. Revisions or additions that are accepted as work items for the Technical Committee will be completed in its annual revision cycle of the Technical Framework.

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3   National Extensions for IHE France

The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical Framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in France. It also translates a number of English terms to ensure correct interpretation of requirements of the Technical Framework.

3.1   Comments

This national extension document was authored under the sponsorship and supervision of GMSIH and JFR, who welcome comments on this document and the IHE France initiative. Comments should be directed to:

Karima Bourquard
IHE-France project manager
Email: kbourquard@yahoo.fr

3.2   IHE-F 2002 Scope

The extensions, restrictions and translations specified apply to the following IHE integration profiles:

- Scheduled Workflow
- Patient Reconciliation
- Consistent Presentation of Images
- Key Image Notes
- Simple Image and Numerical Report
- Access to Radiology Information

3.3   Extended DICOM®[1] Character Sets

The support of accented characters is required for all actors with DICOM-based transactions. The Specific Character Set (0008,0005) Attribute shall contain the value "ISO_IR 100" in order to select ISO 8859/1 Latin-1 characters.

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[1] DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

3.4 Extended HL7®² Character set

The support of accented characters is required for all actors with HL7 based transactions. The Field MSH 18 shall contain the value "8859/1" in order to select the ISO 8859 Latin-1
295 characters.

3.5 Translation of Specific Fields of the PID Segment

The table below provides the translation of specific fields of the PID Segment:

La table ci-dessous fournit la traduction de champs specific du segment PID.

Table 3.5-1: Translation of PID Segment Fields

Champ (Field)	Interprétation/Traduction
Patient Identifier List (PID – 3)	IPP (Identifiant Permanent du Patient)
Legal Name (PID – 5)	Nom patronymique
Maiden Name (PID – 5)	Nom de jeune fille
Display Name (PID – 5)	Nom usuel
SSN Number Patient (PID – 19) This is the personal social security number of the patient which may not be the social security number used for the insurance billing payment.	Numéro de Sécurité Social du patient.
Patient Account Number (PID – 18) Unique identifier for collecting and grouping all elements necessary for charging AND / OR the transmission to the insurance company for charging.	Numéro de compte patient Numéro unique qui permet de collecter et de grouper tous les éléments nécessaires à la facturation ET / OU à la transmission vers les organismes d'assurances et mutuelles, pour prise en charge

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3.6 Insurance Information

The IHE Radiology Technical Framework includes the IN1 and IN2 segments as an option for the purpose of communicating the insurance information of the patient.

305 IHE-France supports the optional use of the segments IN1 and IN2 in order to convey the social security number when used as an insurance number for the patient care. It is used when patient charge posting is made by the clinical / radiology department. It is conveyed through A01, A04 or A08.

Table 3.6-1: IHE profile – IN1 Segment

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
1	4	SI	R			Set ID – IN1
2	60	CE	R			Insurance Plan ID

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² HL7 is the registered trademark of Health Level Seven International.

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
3	59	CX	R			Insurance Company ID

Adapted from the HL7 Standard, version 2.3.1

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Table 3.6-2: IHE profile – IN2 Segment

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
1	60	XON	O			Insured Employee ID
2	60	XON	O			Insured Social Security Number

Adapted from the HL7 Standard, version 2.3.1

3.7 Forbidden PID Fields

In France, it is illegal to transmit the Fields PID-10 (Race) and PID-22 (Ethnic Group).

En France, il est interdit de transmettre les champs PID-10 (Race) et PID-22 (Groupe éthnique).

315 ## 3.8 Syntax Rules for PID-5 (Patient Name)

Last name prefix (<family name (ST) & <last_name_prefix (ST)>) will be used for names with « particule ». Prefix sera utilisé pour la particule des noms à particules.

3.9 Syntax Rules for PID-11 (Patient Address)

The ZIP or Postal Code will contain the "code postal".

320 Le "ZIP or Postal Code" devra contenir le Code Postal.

3.10 Extensions of PID-16 (Marital Status)

Two values, G for Living Together and P for Domestic Partner shall be added to The Marital Status table 002 of HL7 v2.3.1 (User defined table). No IHE-F implementation shall extend this table.

325 *Note: These G and P values have been obtained from HL7 2.4.*

3.11 Translations of PID-16 (Marital Status) and Selection of Values

The table below includes the translations of the PID-16, Marital Status:

La table ci-dessous fournit la traduction de champs specific du segment PID-16, Marital Status:

Table 3.11-1: Translation of PID-16, Marital Status

Valeur	Description	Interprétation/Traduction
A	Separated	**Séparé**
D	Divorced	**Divorcé**
M	Married	**Marié**

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Valeur	Description	Interprétation/Traduction
S	Single	**Célibataire**
W	Widowed	**Veuf/Veuve**
G	Living together	**Concubin**
P	Domestic Partner	**Pacte Civil de Solidarité (PACS)**

330 3.12 Translations of PV1-19, Visit Number

This number corresponds to physical visit of the patient into the hospital. The patient account number may group one or more visit number (PV1-19)

Ce numéro correspond à un passage physique dans l'établissement. Le patient account number (PID-18) regroupe un ou plusieurs «Visit number» (PV1-19).

335 The table below provides the translation of specific fields of the PV1 Segment:

La Table ci-dessous donne la traduction de champs specifiques du segment PV1:

Table 3.12-1: Translation of Specific Fields of PV-1 Segment

Champ	Interprétation/Traduction
Visit Number (PV1 – 19)	Numéro de séjour / numéro de passage ou mouvement

3.13 Extensions of PV1-2 (Patient Class)

340 Two values, W for Week in Hospital, S for Psychiatric, K for Newborn, shall be added to The Patient Class Table 004 of HL7 v2.3.1 (User defined table). No IHE-F implementation shall extend this table.
Note: The Addition of the W, S and K values will be submitted to the HL7 French Chapter when created.

345 3.14 Translations of PV1-2 (Patient Class) and Selection of Values

The table below includes the translations of the PV1-2, Patient Class and shall not be extended:

La table ci-dessous fournit la traduction de champs specifiques du segment PV1-2, Patient Class et ne doit pas être étendue:

Table 3.14-1: PV1-2 Values and Translations

Valeur	Description	Interprétation/Traduction
E	Emergency	Urgence
I	Inpatient	Hospitalisé
O	Outpatient	Externe
P	Preadmit	Peut comprendre les catégories nationale : Hospitalisation

Valeur	Description	Interprétation/Traduction
		programmées, Consultants externes programmés, Psychiatrie programmées, Résidents programmés
R	Recuring Patient	Résident
B	Obstetrics	Obstétrique
D	Day hospital	Hopital du jour
W	Week hospital	Hopital de semaine
S	Psychiatric	Psychiatrie
K	Newborn	Nouveau né

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Note: For S=Psychiatry, in the context of patient admission in this class, the type of admission will be refined in the field PV2-3 Admit Reason *(See Section A.4.15).*

Note : Pour S= Psychiatrie, dans le cadre de l'admission d'un patient dans cette catégorie, le type d'admission sera précisé dans le champ PV2-3 Admit Reason *(voir Section A.4.15).*

3.15 Visit number usage and interpretation

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Field PV1-2 Visit Number is a required field in IHE France.

If Field PV1-2 is « I » then PV1-19 is interpreted as n° de séjour.

If Field PV1-2 is « D or W » then PV1-19 is interpreted as n° de séjour.

If Field PV1-2 is « O » Outpatient then PV1-19 is interpreted as n° de consultation.

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If Field PV1-2 is « R » Inpatient then PV1-19 is interpreted as n° de séance.

3.16 Patient Account Number

Field PID-18 Patient Account Number is an optional field in IHE France.

The field PID-18 may be used in cases when a patient may have multiple visits (each visit having independent transfer and discharge), but where all the visits need to be linked under one Case/Episode number (either for billing or clinical tracking reasons).

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3.17 Translations of PV1-4 (Admission Type) and Selection of Values

The table below includes the translations of the PV1-4, Admission Type and shall not be extended:

La table ci-dessous fournit la traduction de champs specifiques du segment PV1-4, Admission Type et ne doit pas être étendu:

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Valeur	Description	Interprétation/Traduction
A	Accident	Accident de travail

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Valeur	Description	Interprétation/Traduction
C	Elective	Confort (chirurgie esthétique…)
E	Emergency	Urgence
L	Labor and Delivery	Accouchement
N	Newborn (Birth in Healthcare facility)	Nouveau Né
R	Routine	Routine
U	Urgent	Urgent

3.18 Extension and Translations of Physician Types in PV1

The optionality status of PV1-7, PV1-8, PV1-9 and PV1-17 is R2 for French implementation.

375 The table below includes the translations of the PV1 Physician Types:

La table ci-dessous fournit la traduction de champs relatif aux types de doctuers dans PV1:

Table 3.18-1: Translation of PV1 Physician Types

Field	Description	Interprétation/Traduction
PV1-7Attending doctor:	The person primarily responsible for the care of the patient during a particular health care visit (generally used for inpatient events, but could be extended to an outpatient visit as well.)	Médecin responsable pendant la durée de l'admission.
PV1-8Referring doctor	Is any physician who referred the patient to the care of another physician (generally a specialist) for a particular visit. The referring physician might be noted in an HL7 event so that she/he receives a copy of any test results or documentation of care.	Médecin (en général extérieur à l'établissement) qui a adressé le patient.
PV1-9Consulting doctor	Is generally a specialist who sees a patient as the result of a referral or a consultation order. She/he is not the attending physician for the case, although that status could be transferred to a consulting physician at some point.	Le médecin qui est consulté pour un deuxième avis.

Field	Description	Interprétation/Traduction
PV1-17 Admitting doctor	Is the physician who decides that a patient meets the criteria for an inpatient admission to a hospital during a specific visit. The admitting physician is responsible for evaluating the patient so that their acuity satisfies admission criteria.	Médecin de l'établissement qui décide d'hospitaliser un patient. (ex. En cas d'urgence)

3.19 Translation of PV1-51 Visit Indicator and Selection of Value

IHE France will only use the visit indicator at the visit level, there is no accounting information issued.

Table 3.19-1: Translation of PV1-51 Visit Indicator

Valeur	Description	Interprétation/Traduction
V	Visit	Venue

3.20 Extension of PV2-3 (Admit Reason)

Two values listed in Table A.4-1 shall be added to the Table 004 of HL72.3.1 (User defined table). No IHE-F implementation shall extend this table.

3.21 Translation of PV2-3 (Admit Reason) and Selection of Value

In the case of the hospitalization of a patient in psychiatry, one shall use the field PV2-3 Admit Reason as defined below:

Dans le cadre d'une hospitalisation d'un patient en psychiatrie alors on devra utiliser le champ PV2-3 Admit Reason afin de préciser le mode de placement.

Table 3.21-1: PV2-3 Interpretation of Values

Code	Mode de placement
HL	Hospitalisation Libre
HO	Placement d'office
HDT	Hospitalisation à la demande d'un tiers
LV	Levée d'hospitalisation
SE	Sortie à l'essai

3.22 Management of Functional Units

A major difference between the management of responsibilities between the USA and France is that the responsibility for a patient is often managed at the level of a functional unit rather than at

the level of an attending doctor. For this purpose the Z Segment ZFU has been created.

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Il y une différence entre la manière dont les responsabilités sont gérées aux USA et en France. Alors qu'aux USA la responsabilité du patient est très souvent liée au médecin (Attending Doctor), en France, celle-ci est rattachée à l'unité fonctionnelle. C'est pourquoi le champ privé ZFU a été crée.

400 For IHE-F, the ZFU segment is required for messages A01, A02, A04, A05, A06, A07, and A08.

Pour IHE-F ce segment est obligatoire pour les messages: A01, A02, A04, A05, A06, A07, and A08.

Field ZFU-1 Nursing Functional Unit is responsible for the care of the patient.
C'est l'unité fonctionnelle responsable des soins donnés au patient.

405 Field ZFU-2 Housing Functional Unit is responsible for housing the patient.
C'est l'unité fonctionnelle d'hébergement.

Field ZFU-3 Medical Functional Unit is the unit for which the attending doctor is operating.
C'est l'unité fonctionnelle qui a la responsabilité Médicale du patient.

Table 3.22-1: IHE profile - ZFU Segment

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
1	60	XON	C			Nursing Functional Unit: *UF soin*
2	60	TS	C			Nursing Functional Unit Start date/time
3	60	XON	C			Housing Functional Unit: *UF hébergement*
4	60	TS	C			Housing Functional Unit Start date/time
5	60	XON	C			Medical Functional Unit: *UF médicale*
6	60	TS	C			Medical Functional Unit Start date/time

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Conditions: At least one of these three functional units is required (name and date/time that the patient has "entered" the functional unit). Two or three of them can have the same value.

Conditions : Au moins une des ces unités fonctionelles est obligatoire (nom et la date/heure le
415 *patient est « entré » sous l'unité fonctionnelle). Deux ou trois d'entre eux peuvent avoir la même valeur.*

4 National Extensions for IHE Germany

420 The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical Framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in Germany.

4.1 Comments

425 The IHE-D Initiative welcomes comments on this document and the IHE Germany initiative. Comments should be directed to the IHE-D Working Group <ihe-d@rad.rwth-aachen.de> or to Marco Eichelberg <eichelberg@offis.de>, IHE-D Technical Project Manager.

4.2 Scope

The extensions, restrictions and translations specified apply to the following IHE integration 430 profiles:

- Scheduled Workflow
- Patient Reconciliation
- Consistent Presentation of Images

4.3 DICOM: Support for ISO Latin 1

435 All actors with DICOM based transactions shall support the value "ISO_IR 100" for the attribute (0008,0005) "Specific Character Set" if this attribute is defined in the DICOM SOP class used by the IHE transaction. This attribute value specifies the ISO 8859-1 (Latin 1) character set.

4.4 HL7: Support for ISO Latin 1

All actors with HL7 based transactions shall support the value "8859/1" for the field "MSH-18 440 Character Set" in the MSH segment. This value specifies the printable characters from the ISO 8859-1 (Latin 1) character set (see Table 0211 in HL7 Appendix A).

4.5 HL7: German Semantics

The semantics (i.e., names) of the HL7 fields shall be used as defined in the German HL7 edition 2.3.1d published by the German HL7 Chapter (HL7-Benutzergruppe in Deutschland e. V., 445 http://www.hl7.de/). In particular, the use of the following field deviates from the U.S. HL7 specification:

Table 4.5-1: Differences in HL7 Semantics in USA and Germany

Field	HL7 USA Semantics	HL7 Germany Semantics
PID-27	Veteran Military Status	Beruf/Tätigkeit des Patienten (Patient's Profession/Occupation)

4.6 HL7: PID-18 "Patient Account Number" and PV1-19 "Visit Number"

450 *Field PV1-19 "Visit Number"* is required and shall be used to transmit the patient admission identifier ("Fallnummer"). *Field PID-18 "Patient Account Number"* is used to consolidate information relative to several visits and is generally not used in Germany.

4.7 Change PV1-8 "Referring Doctor" to Type R2 in all PV1 Segments

Volume 2, Sections 4.1.4.1.2.4, 4.2.4.1.2.3, 4.4.4.1.2.3 and 4.12.4.2.2.4

455 In RAD TF-2: 4.1.4.1.2.4, 4.2.4.1.2.3, 4.4.4.1.2.3 and 4.12.4.2.2.4, the optionality of *field PV1-8, Referring Doctor*, is C: Conditional. Clinical situations have been identified in which an ORM message is sent for an outpatient, but the Referring Doctor is unknown and, therefore, field PV1-8 cannot be valued. In particular this affects the treatment of emergency outpatients in the German healthcare system.

460 Therefore, the optionality of *field PV1-8, Referring Doctor* shall be changed to R2, meaning that f*ield PV1-8 "Referring Doctor"* shall always be sent when a message contains the PV1 segment and the sending application has data for the field. It may be present otherwise. This change affects the following IHE transactions: Patient Registration, Placer and Filler Order Management, Procedure Scheduled and Patient Update.

465 Tables 4.1-3, 4.2-2, 4.4-2 and 4.12-4 and explanations following shall be modified as shown:

Table 4.7-1: Modifications to PV1-8

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
. . .						
8	60	XCN	R2	0010	00138	Referring Doctor
. . .						

Field *PV1-8 Referring Doctor* shall be valued when a procedure is scheduled for an outpatient, and the sending application has data for the field. It may be present otherwise.

4.8 HL7: ZBE Segment in ADT

470 The ZBE segment is an HL7 extension defined by the German Chapter of HL7. It introduces a field called "Movement ID" which allows, upon the reception of a change message (e. g. ADT^A08), to exactly determine the original message (ADT^A01, ADT^A02) to which the change is related. The following table contains an English translation of the original ZBE definition table which is part of the German HL7, edition 2.3.1d and available online at
475 http://www.hl7.de/zregister/zbeweg.html.

Table 4.8-1: Translation of IHE-Germany ZBE Table

SEQ	LEN	DT	OPT	RP/#	TBL #	ITEM#	ELEMENT NAME
1		EI	R	Y		49071	Movement ID
2		TS	O			49072	Start of Movement Date/Time
3		TS	O			49073	End of Movement Date/Time
4		ST	O			49074	Reason for Triggering the Movement / Processing Identifier ("INSERT", "UPDATE", "DELETE")

480   The use of this Z-segment is optional, but allowed and recommended in IHE-D for all ADT messages.

485   *Note: It is the intention of the IHE-D working group to declare support of the ZBE segment mandatory for all ADT messages sent by an ADT actor in a future version of the German Technical Framework Addendum. Implementations of an ADT actor according to this Technical Framework Addendum are strongly recommended to support the ZBE segment.*

5   National Extensions for IHE United States

The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical Framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in the U.S.A.

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5.1 PID Segment

In the US, *PID-18 Patient Account Number* must be valued and *PV1-19 Visit Number* is required when PID-18 identifies an account that spans more than one encounter or visit.

6   National Extensions for IHE Italy

The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in Italy. It also translates a number of English terms to ensure correct interpretation of requirements of the Technical Framework.

6.1 Comments

This national extension document was authored under the sponsorship and supervision of SIRM, welcome comments on this document and the IHE Italy initiative. They should be directed to the National Project Manager:

> Claudio Saccavini
> IHE-Italy project manager
> Email: csaccavini@rad.unipd.it

6.2 IHE-I Scope

The extensions, restrictions and translations specified apply to the following IHE Integration profiles:

- Scheduled Workflow
- Patient Reconciliation
- Consistent Presentation of Images
- Key Image Notes
- Simple Image and Numerical Report
- Access to Radiology Information

6.3 Extended DICOM Character Sets

The support of accented characters is required for all actors with DICOM-based transactions. The Specific Character Set (0008,0005) Attribute shall contain the value "ISO_IR 100" in order to select ISO 8859/1 Latin-1 characters.

6.4 Extended HL7 Character Set

The support of accented characters is required for all actors with HL7 based transactions. The Field MSH-18 shall contain the value "8859/1" in order to select the ISO 8859 Latin-1 characters.

6.5 Translation of specific Fields of the PID Segment

The table below provides the translation of specific fields of the PID Segment:

La tabella sotto riporta la traduzione di alcunicampi specfici del segmento PID:

Table 6.5-1: Translation of PID Segment Fields

Campo (Field)	Traduzione/Traduction
Patient Identifier List (PID 3)	Identificativivo univoco del paziente all'interno della singola struttura sanitaria. Normalmente può essere il codice sanitario
Legal Name (PID 5)	Cognome e Nome del paziente. Nel caso delle donne sposate non si utilizza ma il cognome del marito.
Maiden Name (PID 5)	Campo non utilizzato in Italia
SSN Number Patient (PID 19)	Numero della tessera sanitaria del Servizio Sanitario Nazionale della Regione di Residenza del paziente.
Patient Account Number (PID 18)	Codice Fiscale del Paziente
Campo (Field)	Traduzione/Traduction

6.6 Syntax Rules for PID-11 (Patient Address)

530 The ZIP or Postal Code will contain the "code postal".
Il "ZIP or Postal Code" dovrà contenere il Codice di Avviamento Postale.

6.7 Translations of PV1-19, Visit Number

This number corresponds to physical visit of the patient into the hospital.
Questo numero corrisponde al numero di ricovero per i pazienti interni, o al numero di richiesta
535 *nel caso di pazienti esterni.*

6.8 Extensions of PV1-2 (Patient Class)

We introduce three new types of Patient Class, the Day Hospital, the After Dismission and the Protected Dismission.
Sono stati introdotte tre nuove classi di paziente: il Day Hospital, il Post-Ricovero e la
540 *Dimissione Protetta.*

Table 6.8-1: Translation of PV1-2 Segment Fields Patient Class

Value	Description	Translation/Traduzione
E	Emergency	Paziente proveniente dal Pronto Soccorso
I	Inpatient	Paziente in Ricovero Ordinario
O	Outpatient	Paziente Esterno o Ambulatoriale
P	Preadmit	Paziente in Ricovero Programmato
R	Recurring Patient	Paziente con ricovero che prevede cicli di cura
B	Obstetrics	Valore non utilizzato in Italia
D	Day Hospital	Paziente in regime di ricovero giornaliero
C	After Dismission	Paziente in regime di prestazioni di post-ricovero

Value	Description	Translation/Traduzione
X	Protected Dismission	Paziente in regime di Dimissione Protetta

6.9 Patient Account Number

Field PID-18 Patient Account Number is a required field in IHE Italy.
Il Campo PID-18 Patient Account Number è obbligatorio per IHE-Italy

545 ## 6.10 Extension and Translations of Physician Types in PV1

The table below includes the translations of the PV1 Physician Types:
La tabella sotto riportata fornisce l'interpretazione dei Tipi Medici:

Table 6.10-1: Translation of Physician Types in PV1

Campo (Field)	Translation/Traduzione
PV1-7Attending doctor	Medico responsabile della cura del paziente durante il ricovero, il medico di medicina generale nel caso di un paziente esterno o ambulatoriale
PV1-8Referring doctor	Il medico che richiede la consulenza e che è indicato come il destinatario della risposta dello specialista.
PV1-9Consulting doctor	Il medico che esegue la consulenza richiesta dal Referring Doctor
PV1-17 Admitting doctor	Il medico che decide il ricovero del paziente

7   National Extensions for IHE United Kingdom

7.1 Introduction

550   This appendix to the IHE Radiology Technical Framework document shall be used in conjunction with the integration profiles defined in the IHE Radiology Technical Framework. This document includes provisions that must be implemented by UK participants in the European Connectathon to be held from 2003 onward.

7.2 Scope

555   The extensions, restrictions and translations specified apply to the following IHE Integration Profiles:

- Scheduled Workflow
- Patient Reconciliation
560   - Consistent Presentation of Images

7.3 HL7: PID-18 "Patient Account Number"

Field PID-18 "Patient Account Number "is not supported in the UK (i.e., ignored).

7.4 HL7: PV1-19 "Visit Number"

Field PV1-19 "Visit Number" shall contain a locally unique patient admission identifier
565   (Enterprise Visit Identifier).

7.5 HL7: PV1-8 "Referring Doctor"

Field PV1-8 "Referring Doctor" shall always be sent when a message contains the PV1 segment.

Note: In the Technical Framework, rev. 5.5, PV1-8 is only required for ADT^A04 messages.

Note: In HL7 UK standard this field is optional

570   The table below shows PV1 Field Physician Types as given in IHE France specifics:

Field	Description
PV1-7 Attending doctor:	The person primarily responsible for the care of the patient during a particular healthcare visit (generally used for inpatient events, but could be extended to an outpatient visit as well.)
PV1-8 Referring doctor:	Is any physician who referred the patient to the care of another physician (generally a specialist) for a particular visit. The referring physician might be noted in an HL7 event so that she/he receives a copy of any test results or documentation of care.
PV1-9 Consulting doctor:	Is generally a specialist who sees a patient as the result of a referral or a consultation order. She/he is not the attending physician for the case, although that status could be transferred to a consulting physician at some point.

Field	Description
PV1-17 Admitting doctor	Is the physician who decides that a patient meets the criteria for an inpatient admission to a hospital during a specific visit. The admitting physician is responsible for evaluating the patient so that their acuity satisfies admission criteria.

7.6 DICOM: Support for ISO Latin 1

575 All actors with DICOM based transactions shall support the value "ISO_IR 100" for the attribute (0008,0005) "Specific Character Set" if this attribute is defined in the DICOM SOP class used by the IHE transaction. This attribute value specifies the ISO 8859-1 (Latin 1) character set.

Note: this character set supports the Welsh language

7.7 HL7: Support for ISO Latin 1

580 All actors with HL7 based transactions shall support the value "8859/1" for the field "MSH-18 Character Set" in the MSH segment. This value specifies the printable characters from the ISO 8859-1 (Latin 1) character set (see Table 0211 in HL7 Appendix A).

Note: this character set supports the Welsh language

8 National Extensions for IHE Canada

585 The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical Framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in Canada. It also translates a number of English terms to French to ensure correct interpretation of requirements of the Technical Framework.

8.1 Comments

590 This national extension document was authored by the Radiology committee of IHE Canada. Comments and suggestions should be sent to infocentral@infoway-inforoute.ca

The extensions, restrictions and translations specified apply to the IHE Radiology Technical Framework.

8.2 Extended DICOM Character Sets

595 The support of accented characters is required for all actors with DICOM-based transactions. The Specific Character Set (0008,0005) Attribute shall contain the value "ISO_IR 100" in order to select ISO 8859/1 Latin-1 characters.

8.3 Extended HL7 Character set

The support of accented characters is required for all actors with HL7 based transactions. The
600 Field MSH 18 shall contain the value "8859/1" in order to select the ISO 8859 Latin-1 characters.

8.4 Translation of Specific Fields of the PID Segment

The table below provides the translation of specific fields of the PID Segment:

La table ci-dessous fournit la traduction de champs spécifiques du segment PID.

605 **Table 8.4-1: Translation of PID Segment Fields or component values**

Champ (Field)	Interprétation/Traduction
Patient Identifier List (PID – 3)	Numéro de dossier
Legal Name (in table 0200 for name type in PID – 5)	Nom de famille
Maiden Name (in table 0200 for name type in PID – 5)	Nom de fille
Display Name (in table 0200 for name type in PID – 5)	Nom usuel
SSN Number Patient (PID – 19) This is the personal social security number of the patient which may not be the social security number used for the insurance billing payment.	Numéro de Sécurité Social du patient.
Patient Account Number (PID – 18) Unique identifier for collecting and grouping all elements necessary for	Numéro de compte patient Numéro unique qui permet de collecter et de grouper tous les éléments

Champ (Field)	Interprétation/Traduction
charging AND / OR the transmission to the insurance company for charging.	nécessaires à la facturation ET / OU à la transmission vers les organismes d'assurances et mutuelles, pour prise en charge

8.5 Syntax Rules for PID-5 (Patient Name)

Last name prefix (<family name (ST) & <last_name_prefix (ST)>) will be used for names with « particule ». Prefix sera utilisé pour la particule des noms à particules.

8.6 Extensions of PID-16 (Marital Status)

610   One value, G for Living Together shall be added to The Marital Status table 002 of HL7 v2.3.1 (User defined table).

Note: The value G has been obtained from HL7 v2.4.

Table 8.6-1: Translation of PID-16, Marital Status

Valeur	Description	Interprétation/Traduction
A	Separated	**Séparé**
D	Divorced	**Divorcé**
M	Married	**Marié**
S	Single	**Célibataire**
W	Widowed	**Veuf/Veuve**
G	Living together	**Concubin**

8.7 Translations of PV1-2 (Patient Class) and Selection of Values

615   The value 'D', for 'Day hospital' or 'Hospitalisation d'un jour' shall be added to the table 0004.

8.8 Visit number usage and interpretation

PV1-19 (Visit Number) is an identifier for the visit or consult episode.

If Field PV1-2 is « I » Inpatient then PV1-19 is interpreted as visit number, or n° de séjour.

If Field PV1-2 is « D » Day Patient then PV1-19 is interpreted as visit number, or n° de séjour.

620   If Field PV1-2 is « O » Outpatient then PV1-19 is interpreted as consult number, or n° de consultation.

If Field PV1-2 is « R » Recurring Inpatient then PV1-19 is interpreted as session number, or n° de séance.

8.9 Extension and Translations of Physician Types in PV1

625   The optionality status of PV1-8 is R for the Canadian implementation.

The table below includes the translations of the PV1 Physician Types:

La table ci-dessous fournit la traduction de champs relatif aux types de médecins dans PV1:

Table 8.9-1: Translation of PV1 Physician Types

Field	Description	Interprétation/Traduction
PV1-7 Attending doctor:	The person primarily responsible for the care of the patient during a particular health care visit (generally used for inpatient events, but could be extended to an outpatient visit as well.)	Médecin traitant.
PV1-8 Referring doctor	Is any physician who referred the patient to the care of another physician (generally a specialist) for a particular visit. The referring physician might be noted in an HL7 event so that she/he receives a copy of any test results or documentation of care.	Médecin référant.
PV1-9Consulting doctor	Is generally a specialist who sees a patient as the result of a referral or a consultation order. She/he is not the attending physician for the case, although that status could be transferred to a consulting physician at some point.	Le médecin qui est consulté pour un deuxième avis.
PV1-17 Admitting doctor	Is the physician who decides that a patient meets the criteria for an inpatient admission to a hospital during a specific visit. The admitting physician is responsible for evaluating the patient so that their acuity satisfies admission criteria.	Médecin responsable de l'admission.

9 National Extensions for IHE Spain

630 The national extensions documented in this section shall be used in conjunction with the definitions of integration profiles, actors and transactions provided in Volumes 1-3 of the IHE Radiology Technical Framework. This section includes extensions and restrictions to effectively support the regional practice of healthcare in Spain. IHE Spain provides a translation tool to ensure correct interpretation of requirements of the Technical Framework (see www.ihe-e.org).

9.1 Comments

635 IHE-Spain (from now on IHE-E) welcomes comments on this document and the IHE Spain initiative. Comments can be directed to the IHE-E technical manager, following the links of the IHE-E web site: www.ihe-e.org.

9.2 IHE-E: Scope of National Extension

640 The extensions, restrictions and translations specified apply to HL7 and DICOM requirements as used in IHE integration profiles: such as Scheduled Workflow.

9.3 1.3 IHE-E: Translation of IHE terms into Spanish

A JAVA tool has been developed to support the translation of the main IHE terms into Spanish. This tool provides a dictionary that contains integration profiles, actors and transactions, and for 645 each one, the domain/TF document where they are referenced (if applicable), acronym, the translation of the term into Spanish, and a short description.

The last version of this JAVA tool can be downloaded from the web site of the Spanish IHE initiative (www.ihe-e.org).

9.4 Support for ISO Latin 1

9.4.1 HL7

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All actors with HL7 based transactions shall support the value "8859/1" for the field "MSH-18 Character Set" in the MSH segment. This value specifies the printable characters from the ISO 8859 (Latin 1) character set.

Note: this character set supports all languages which are official in Spain.

9.4.2 DICOM

655

All actors with DICOM based transactions shall support the value "ISO_IR_100" for the attribute (0008, 0005) "Specific Character Set" if this attribute is defined in the DICOM SOP class used by the IHE transaction. This attribute specifies the ISO 8859-1 (Latin 1) character set.

Note: this character set supports all languages which are official in Spain.

9.5 Patient Identification Data

660

This section is intended to give an orientation in the use of the main attributes related to the patient entity and which can be subject to an ambiguous interpretation. Likewise, we will focus in the use or adoption or codifications that allow a higher interoperability between systems.

9.5.1 Spanish naming convention: the second family name

665

In Spain, people use two family names. In this document they will be referred to as the first family name and the second family name. The first family name is the father's first family name and the second family name is the mother's first family name.

For instance, Picasso is known for his second family name. His real name was Pablo Ruiz Picasso, son of José Ruiz Blasco, and Maria Picasso Lopez.

670

Another example useful for non-Spanish readers: The daughter of the actors Antonio Banderas and Melanie Griffith is named Estela Banderas Griffith.

Note that, as women in Spain don't change names when they get married, a person's second family name is as well his/her mother's maiden name.

The patient's second family name is an essential attribute for a person's identification in Spain.

675

However, if a person is not of Spanish descent, it is possible that he or she does not have a second family name

Handling particles

It is quite common in Spain that names have particles. Some examples of this are Felipe de Borbon y Grecia or Teresa Garcia de la Vega. These particles are not handled consistently across

680

hospitals (or other information systems) and its codification is beyond the scope of this national extension. Common solutions are either adding de particle at the end of the name (|BORBON>Y GRECIA^FELIPE DE|) or before the surname (|DE BORBON>Y GRECIA^FELIPE)|

9.5.2 HL7

Most of the identification data of a patient are specified in the PID segment as described in the

685

table below (Table 1. PID attributes, HL7 version 2.3.1. Chapter 3, Section 3.4.2)

Table 9.5.2-1: IHE profile –PID Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	4	SI	O			00104	Set ID – PID
2	20	CX	B			00105	Patient ID
3	20	CX	R	Y		00106	Patient Identifier List
4	20	CX	B	Y		00107	Alternate Patient ID – PID
5	48	XPN	R	Y		00108	Patient Name
6	48	XPN	O	Y		00109	Mother's Maiden Name

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
7	26	TS	O			00110	Date/Time of Birth
8	1	IS	O		0001	00111	Sex
9	48	XPN	O	Y		00112	Patient Alias
10	80	CE	O	Y	0005	00113	Race
11	106	XAD	O	Y		00114	Patient Address
12	4	IS	B		0289	00115	County Code
13	40	XTN	O	Y		00116	Phone Number – Home
14	40	XTN	O	Y		00117	Phone Number – Business
15	60	CE	O		0296	00118	Primary Language
16	80	CE	O		0002	00119	Marital Status
17	80	CE	O		0006	00120	Religion
18	20	CX	O			00121	Patient Account Number
19	16	ST	B			00122	SSN Number – Patient
20	25	DLN	O			00123	Driver's License Number - Patient
21	20	CX	O	Y		00124	Mother's Identifier
22	80	CE	O	Y	0189	00125	Ethnic Group
23	60	ST	O			00126	Birth Place
24	1	ID	O		0136	00127	Multiple Birth Indicator
25	2	NM	O			00128	Birth Order
26	80	CE	O	Y	0171	00129	Citizenship
27	60	CE	O		0172	00130	Veterans Military Status
28	80	CE	O		0212	00739	Nationality
29	26	TS	O			00740	Patient Death Date and Time
30	1	ID	O		0136	00741	Patient Death Indicator

Adapted from the HL7 Standard, version 2.3.1

9.5.2.1 Second family name

690 **Patient's second family name**

Amongst the fields defined for the PID segment, there is no specific location for the second family name. In most current implementations, the field selected to convey this information is PID-6 Mother's Maiden Name (XPN). This is a composed data type, whose description according to HL7 v2.3.1 is the following:

695 XPN Components: <family name (ST)> & <last_name_prefix (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (IS)> ^ <name type code (ID) > ^ <name representation code (ID)>

The second name shall be positioned in the following XPN route:

PID-6 Mother's maiden name → Family Name

700   However, this solution can't be extended to reporting other second family names, i.e., attending doctor. To achieve a rule that is consistent for reporting second family names of all person's involved, it is suggested that the second family name is coded as a subcomponent of the patient's family name as well.

Therefore the component <family name (ST)> can have two parts the first family name and the
705   second family name, separated by a >, as shown in the following example:

|BANDERAS>GRIFFITH^ESTELA|

As people who are not Spanish descendants may not have second family name this field PID-6 is not required to be filled.

710   **Professional's second family name**

The second family name is used for any persons, including patients. An example can be the name of the physician visiting a patient (i.e., PV1 9, Consulting Doctor XCN).

In HL7 v2.3.1 a subcomponent of the family name component can be used in the same way is done for the patient name.

715   In v2.5 the definition for XCN data type is changed, and it is recommended to place both patient and professional names of XCN fields such as "Consulting Doctor", in the following XCN route:

 "Field x" →Second and Further Given Names or Initials Thereof

9.5.2.2 Patient Identifiers

The identifier associated to a patient shall be located in the PID-3 Patient Identifier List field.

720   According to HL7 v2.3.1 the patient identifier list is defined as follows.

```
PID-3 Patient identifier list (CX)   00106

    Components:  <ID (ST)> ^ <check digit (ST)> ^ <code identifying the check
        digit scheme employed (ID)> ^ <assigning authority (HD)> ^
        <identifier type code (IS)> ^ <assigning facility (HD)>

    Subcomponents of assigning authority: <namespace ID (IS)> & <universal ID
        (ST)> & <universal ID type (ID)>

    Subcomponents of assigning facility:  <namespace ID (IS)> & <universal ID
        (ST)> & <universal ID type (ID)>
```

This is a mixed type that allows great flexibility of use due to its subcomponents. With the goal
730   of simplifying the patient identifier's management, the use of the components shown in Table 2 is required.

Table 9.5.2-2: HL7 v2.3.1 PID-3
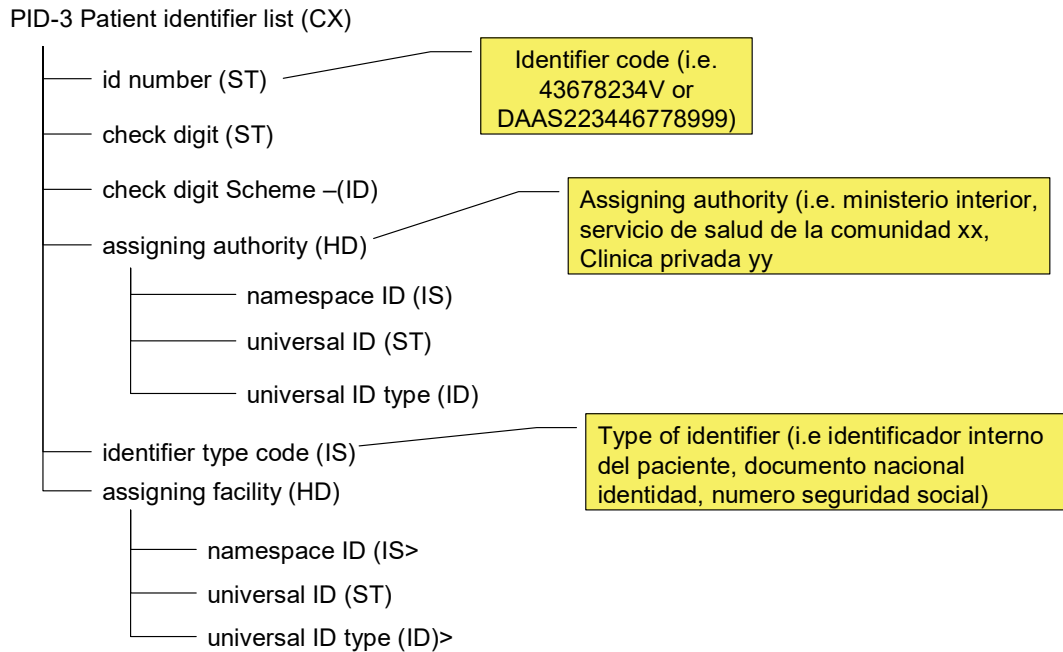
There are many approaches for the management of these identifiers (for more details in other possible strategies see [1]). The technical subcommittee has decided to use specific values for assigning authorities and identifier type codes. These are summarized in Table 3. The last column, assigning jurisdiction is a field added in HL7 v2.5, and is shown here only as a recommendation for future HL7 v2.5 implementations.

Table 9.5.2-3: Spain's local codes for HL7 v2.3.1 PID-3, assigning authority fields

Description		Codes to be used		
Identifier (Spanish name)	Identifier (English description)	Assigning Authority	Identifier Type Code	Assigning Jurisdiction (recommendation for HL7 v2.5)
DNI	National identify card	NamespaceID: MI	NNESP3	Identifier ESP4 Name of Coding System: ISO3166 (3 char)

---

3 The last 3 characters correspond to the ISO3166 code (3 characters) of the country that issues the document. See reference [6].

4 This applies only for Spain. For other countries, their ISO codification should be taken into.

Description		Codes to be used		
Identifier (Spanish name)	**Identifier (English description)**	**Assigning Authority**	**Identifier Type Code**	**Assigning Jurisdiction (recommendation for HL7 v2.5)**
Pasaporte	Passport	NamespaceID: MI	PPN	Identifier ESP2 Name of Coding System: ISO3166 (3 char)
Trajeta residencia	Spanish identity card for foreigners resident in Spain	NamespaceID: MI	PRC	Identifier: ESP2 Name of Coding System: ISO3166 (3 char)
Número afiliación Seguridad Social	Social Security id	NamespaceID: SS	SS	Identifier: ESP Name of Coding System: ISO3166 (3 char)
CIP autonómico	Regional authority unique patient identifier	NamespaceID:CAXX5	JHN	Identifier: AN, AR, .. Name of Coding System: ISO3166-26
CIP del SNS	National health authority unique patient identifier	Namespace ID: MS	HC	Identifier: ESP Name of Coding System: ISO3166 (3 char)
CIP europeo	European patient identifier	NamespaceID: TSE	HC	Identifier: EU Name of Coding System: ISO3166
ID interno	Internal patient identifier	Definition pending	PI	Definition pending

740

9.5.2.3 Contact Data

For the contact data (mail, telephone, etc.) the use of PID-13 Phone Number – Home shall be used. This field is of the type XTN (extended telecommunication number data type)

The following fields shall be used:

745
- *phone number* (NM): this field contains the telephone number (without country code)

- *telecommunication use code*: in this field the values suggested in the HL7 0201 table shall be used.

- *telecommunication equipment type*: in this field, the values suggested in the HL7 0202 shall be used.

---

[5] The ISO code should be replaced with the regional authority ("Comunidad autonoma" - CA) ISO (see following note). See reference [5] for autonomous regions codification.

[6] ISO regional authority (CCAA) Codification. See reference [5].

750
- *country code*: the international code for Spain, +34, is optional. Foreign international codes shall be filled in.

9.5.2.4 Address Data

The field used in the PID segment to store the possible addresses of the patient is PID-11 Patient Address.

755
```
Components:  <street address (ST)> ^ <other designation (ST)> ^ <city
     (ST)> ^ <state or province (ST)> ^ <zip or postal code(ST)> ^
     <country (ID)> ^ < address type (ID)> ^ <other geographic
     designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>
     ^ <address representation code (ID)>
```

760
To identify the type of address, it is recommended that the values from the HL7 table 0190 be used in the following way:

Table 9.5.2-4: Spain's recommended local codes for address type

Type of address	"Address Type" Field
Fiscal (tax)	L
Empadronamiento (city register)	H
Contacto (contact)	M
Empresa (company)	B
Desplazado (temporal)	C

In the event that the "address type" is not filled in, the address is considered to be the city
765
register's postal address (H).

The components of the address field are recommended to be used as follows:

Table 9.5.2-5: Spain's recommended interpretation for HL7 v.2.3.1 PID-11 components.

PID-11 component	Recommended interpretation	Recommended coding scheme
"Street Address"	Tipo de vía, nombre de la vía y número de la vía	n/a
"City":	Municipio	INE code[7]
"State or Province":	Provincia	INE code[5]
"Zip or postal code"	Código Postal	
"Country"	País	ISO3166 (3 characters)
"Other geographic designation"	Población[8]	n/a

---

[7] Spain's recommended interpretation for HL7 v.2.3.1 PID-11 components.

[8] Only used in case that the name of the city does not match the name of the INE codified district.

In HL7 v2.5 the street address component is modified to include a set of subfields. The
770 recommendation for future HL7 v2.5 implementations is:

Table 9.5.2-6: Spain's recommended interpretation for HL7 v.2.5 PID-11 Street address subfields.

Subfields of "Street Address" component	Recommended interpretation
"Street or mailing address"	Tipo de vía
"Street name"	Nombre de la vía
"Dwelling number"	Número de la vía

9.5.3 DICOM: Patient Identification Module

775 The DICOM Standard provides definitions for the information objects [9]. Most of the
identification data of a patient are specified in the Patient Modules. (DICOM PS 3.3. Patient
Identification Module). Patient Identification Attributes are summarized in DICOM PS 3.3.
Table C.2-2.

9.5.3.1 Second family name

780 Attribute Patient's Name (0010, 0010) has a value representation ([10] 6.2. Value
Representation, VR) of person name (PN), which does not allow to distinguish [11] between the
first and the second family name.

Amongst the patient's personal data fields available in the Patient Identification Modules, there
is as well no specific location for the second family name.

785 Therefore, it is recommended that the first and second family names are placed in the first
component of PN, family name, in the above mentioned order, using the character ">" (ANSI
003E hex) as delimiter.

Other Patient Name (0010,1001) attribute was not chosen to specify second family name because
790 there are other Names in the system such as the Referring Physician which can be encoded in the
same way.

Other examples besides the Referring Physician's Name (0008, 0090), are Performing
Physician's Name (0008, 1050), Name of Physician's Reading Study (0008, 1060), Operator's
795 Name (0008, 1070), Names of Intended Recipients of Results (0040,1010), Order Entered By
(0040,2008), Human Performer's Name (0040,4037), Verifying Observer Name (0040,A075),
Content Creator's Name (0070,0084), Reviewer Name (300E,0008), Interpretation Recorder
(4008,0102), and Interpretation Transcriber (4008,010A).

9.5.3.2 Patient Identifiers

800   The main patient identifier shall be reported in:

    (0010, 0020)   "Patient ID"

    (0010, 0021)   "Issuer of Patient ID" (Corresponds to HL7 "Assigning authority", see Table 3 for recommended codes)

805   In some cases the Assigning authority alone is not enough to ensure a unique interpretation of the patient id (see Table 3), and additional information regarding the "Identifier Type Code" is needed. This is supported in HL7 v2.3, but not in the current DICOM specification. Please note that this issue may lead to errors if an assigning authority uses only the identifier type code to distinguish between the patient identifiers.

810   To code more than one patient identifier, the attribute (0010,1002) "Other Patient IDs Sequence" (DICOM PS 3.3 - 2007 Page 242) can be used.

9.6 Insurance Data

This section recommends a representation for insurance data. It focuses on the identification of the Insurance Company and does not cover the specific conditions of the insurance. This last
815   aspect depends mainly on implementation and it goes beyond the aim of this national extension.

The proposal for the identification of the patient's main insurance data can be found in document [8].

9.6.1 HL7: Insurance Data Mapping

Table 9.6.1-1 describes the elements of the HL7 v2.3.1 IN1 segment (chapter 6, section 6.4.6)
820   that shall be used and their recommended interpretation. Fields 1,2 and 3 are required according to HL7 v2.3.1 definition.

IN1 segment should not be sent if the information in IN1-3 (Insurance company ID) is not relevant.

Table 9.6.1-1: Spain's recommended interpretation for HL7 v.2.3.1 IN1

IN1 Field	Recommended interpretation	Optionality
In1-1 Set id IN1	Number that identifies the transaction. If the patient has more than one insurance company, the message shall be repeated for each company, using a different transaction ID.	Required
In1-2 Insurance Plan ID	Coverage Plan identifier.	Required
In1-3 Insurance Company ID	Unique company identifier.	Required

IN1 Field	Recommended interpretation	Optionality
In1-4 Insurance Company Name	Name of the company. We suggest repeated use of this field to identify the name of the company's delegation.	Optional
In1-12 Plan effective date	The date the Coverage Plan comes into force.	Optional
In1-13 Plan expiration date	The date the Coverage Plan finishes.	Optional
In1-36 Policy Number	Policy number.	Optional

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9.7 Examples

9.7.1 HL7 Example 1

The first example provided is the PID information of a patient living in the Extremadura region. Only information addressed within this document is shown.

830

Datos del paciente	Patient data	
Nombre	Name	Manuel
Primer Apellido	First family name	Fernández
Segundo Apellido	Second family name	Ferrer
Identificadores	Identifiers	
DNI	National identity card	37456765V
CIP autonómico	Regional authority unique patient identifier	CAEX123456789088 (extremadura =EX)
Número afiliación Seguridad Social	Social Security id	061081880847
Identificador interno del HIS	Internal patient id at the HIS	9987765
Datos de contacto	Contact information	
Teléfono de casa	Home phone	924678564
Móvil	Cell phone	659877877
Correo electrónico	e-mail	mfernandez@hl7spain.org
Direcciones	Adresses	
Dirección de empadronamiento	Address for the city register	
Tipo de vía	Street type (avenue, square,..)	Avenida
Nombre de la vía	Street name	Alange
Número	Street number	8
Piso	Floor	4ª-3ª
Escalera	Stair	B

Datos del paciente	Patient data	
Código Postal	Zip code	06800
Municipio	City	Mérida
Población	City	Mérida
Provincia	Province	Badajoz
País	*Country*	España
Dirección de contacto	Contact address	
Tipo de vía	Street type	Calle
Nombre de la vía	Street name	Constitución
Número	Street number	34
Piso	Floor	1º-C
Escalera	Stair	
Código Postal	Zip code	06800
Municipio	City	Mérida
Población	City	Mérida
Provincia	Province	Badajoz
País	Country	España

The location of these data in an HL7 message would be the following:

PID-3 Patient identifier List	ID Number		37456765V
	Assigning Authority		
		Namespace ID	MI
	Identifier Type Code		NNESP
	ID Number		CAEX123456789088
	Assigning Authority		
		Namespace ID	CAEX
	Identifier Type Code		JHN
	ID Number		61081880847
	Assigning Authority		
		Namespace ID	SS
	Identifier Type Code		SS
	ID Number		9987765
	Assigning Authority		
		Namespace	HC

		ID	
	Identifier Type Code		PI
PID-5 Patient Name	Family Name		
		Surname	Fernández
	Given Name		Manuel
PID-6 Mother's Maiden Name	Family Name		
		Surname	Ferrer
	Given Name		
PID-11 Patient Address	Street Address		Avenida Alange 8 4º-3ª Escalera B
	Other Designation		
	City		06083
	State or Province		06
	Zip or Postal Code		06800
	Country		ESP
	Address Type		H
	Other Geographic Designation		
	Street Address		Calle Constitución 34 1ª - C
	Other Designation		
	City		06083
	State or Province		06
	Zip or Postal Code		06800
	Country		ESP
	Address Type		M
	Other Geographic Designation		
PID-13 Phone Number - Home	Telecommunication Use Code		PRN
	Telecomm. Equipment Type		PH
	Country code		+34
	Phone Number		924678564
	Telecommunication Use Code		WPN
	Telecomm. Equipment Type		CP
	Country code		+34
	Phone Number		659877877
	Telecommunication Use Code		NET
	Telecomm. Equipment Type		Internet

	Email Address	mfernandez_f@ihe-e.org

And the corresponding PID segment in a message would be:

835

PID|
1|
37456765V^^^MI&&^NNESP^~
CAEX123456789088^^^CAEX&&^JHN^~
840 61081880847^^^SS&&^SS^~
9987765^^^HC&&^PI^~||
FERNANDEZ>FERRER^MANUEL|
FERRER||
F|||
845 Avenida Alange 8 4º-3ª Escalera B^^06083^06^06800^ESP^H^^^^~
Calle Constitución 34 1ª - C^^06083^06^06800^ESP^M^^^^||
^PRN^PH^^^924678564~
^WPN^CP^^^659877877~
^NET Internet^^^mfernandez_f@ihe-e.org

850 ## 9.7.2 HL7 Example 2

This example shows the data of a patient admitted in the Emergency Room of the "Hospital Virgen de la Salud" at Toledo (Castilla La Mancha Region).

Datos del paciente	Patient data	
Nombre	Name	Estela
Primer Apellido	First family name	Banderas
Segundo Apellido	Second family name	Griffith
Fecha de nacimiento	Date of birth	June 1st, 1970
Identificadores	Identifiers	
DNI	National identity card	00000001R
CIP autonómico	Regional authority unique patient identifier	HOPN700641916019
Número afiliación Seguridad Social	Social Security id	2803800541502
Identificador interno del HIS	Internal patient id at the HIS	40004
Datos de contacto	Contact information	
Teléfono de casa	Home phone	925 123 456
Otro teléfono de contacto	Secondary contact telephone	925 654 321
Móvil	Cell phone	660 445 566
Correo electrónico	e-mail	
Direcciones	Adresses	

Datos del paciente	Patient data	
Dirección de contacto	Contact address	
Nombre de la vía	Street name	Plaza de Alfares 2 , Apt. 2º "A"
Código Postal	Zip code	45002
Municipio	City	Toledo
Población	City	
Provincia	Province	Toledo
País	Country	

The patient identifiers are coded as follows:

855

CIP autonomico	HOPN700641916019^^^CACM&&^JHN^
DNI	00000001R^^^MI&&^NNESP^
Identificador interno del HIS (Número de historia clínica)	40004^^^PI&&^
Número afiliación Seguridad Social	2803800541502^^^SS&&^SS^

The address is coded taking into account that the code for the city of TOLEDO is (45 1685) and the province of is TOLEDO(45) 45002 ESP M

860   Plaza de Alfares 2, Apt. 2º A^451685^45^45002^ ESP^M

The resulting patient identification segment (PID) is as follows:

PID|1|HOPN700641916019^^CACM&&^JHN^~
00000001R^^MI&&^NNESP^~
865   40004^^^PI&&^^^~
2803800541502^^SS&&^SS^^^~||
BANDERAS>GRIFFITH^ESTELA|
GRIFFITH|
19700601|
870   F|||
Plaza de Alfares 2 , Apt. 2º A^451685^45^45002^ ESP^M||
^PRN^PH^^^925123456~
^ORN^PH^^^925654321~
^ORN^CP^^^660445566

---

875 9.7.3 DICOM Example 1

The patient information described in Section 9.7.1 HL7 example 1 would be codified as follows in DICOM.

TAG	Value
(0010,0010)	FERNANDEZ>FERRER^MANUEL
(0010,0020)	9987765
(0010,0021)	PEND
(0010,1002)	
(0010,0020)	CAEX123456789088
(0010,0021)	CAEX
(0010,0022)	TEXT
(0010,0020)	61081880847
(0010,0021)	SS
(0010,0022)	TEXT
(0010,0020)	37456765V
(0010,0021)	MI
(0010,0022)	TEXT
(0010,1040)	Avenida Alange 8 4º-3ª Escalera B
(0010,1060)	FERRER>
(0010,2150)	ESP
(0010,2152)	06083
(0010,2154)	+34924678564 / +34659877877

880

9.7.4 DICOM Example 2

The patient information described in Section 9.7.2 HL7 example 2 would be codified as follows in DICOM.

TAG	Value -according to option 1
(0010,0010)	BANDERAS>GRIFFITH^ESTELA
(0010,0020)	40004
(0010,0021)	PEND
(0010,0022)	TEXT
>(0010,1002)	
>(0010,0020)	2803800541502
>(0010,0021)	SS
>(0010,0022)	TEXT

TAG	Value -according to option 1
>(0010,0020)	00000001R
>(0010,0021)	MI
(0010,0022)	TEXT
(0010,1040)	Plaza de Alfares 2, Apt. 2º A
(0010,1060)	GRIFFITH
(0010,2150)	ESP
(0010,2152)	451685
(0010,2154)	+34925123456 / +34925654321 / +34660445566

885

9.8 References

[1] Proposal for Identifiers Management

(Technical Subcommittee HL7 Spain, http://www.hl7spain.org/)

[2] Minutes of Meeting – Technical Subcommittee ADT 03-02-2005

890   (Technical Subcommittee HL7 Spain, http://www.hl7spain.org/)

[3] Minutes of Conference Call Technical Subcommittee ADT 14-02-2005

(Technical Subcommittee HL7 Spain, http://www.hl7spain.org/)

[4] Minutes of Meeting Technical Subcommittee ADT 10-03-2005

(Technical Subcommittee HL7 Spain, http://www.hl7spain.org/)

895   [5] ISO Codification for Regions (autonomous regions) in Spain

(ISO, http://www.iso.org/iso/en/prods-services/iso3166ma/03updates-on-iso-3166/nli-4.pdf)

[6] ISO Codification for Countries

(ISO, http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/iso_3166-1_decoding_table.html#EU)

900   [7] INE Codification for Districts and Provinces

(http://www.ine.es/inebase/cgi/um?M=%2Ft20%2Fe245%2Fcodmun&O=inebase&N=&L=0)

[8] Proposal for Insurance data associated with the patient

(Technical Subcommittee HL7 Spain, http://www.hl7spain.org/)

[9] DICOM Part 3: IOD, information Object Definitions

905   [10] DICOM Part 5, Data Structures and Encoding

[11] ANSI HISPP MSDS: COMMON DATA TYPES for Harmonization of Communications Standards in Medical Informatics

10 National Extensions for IHE Japan

See Section 10.5 for examples of messages illustrating the requirements specified here.

10.1 Comment Submission

This national extension document was authored under the sponsorship and supervision of JRS, JAMI, MEDIS, JIRA, JSRT and JAHIS by the IHE Japan initiative, who welcome comments on this document and the IHE Japan initiative.

Comments should be directed to:

Shirou Endou, IHE-J Secretary, endou@ihe-j.org

10.2 Referenced Standards

This National Extension depends on the following standards (which are approved by the Ministry of Health, Welfare and Labour of Japan):

- The JAHIS Protocol for Radiology Data Communication v.3.0C (JRDC), issued by Japanese Association of Healthcare Information System Industry (JAHIS), which is found at http://www.jahis.jp/

- Radiology Procedure Codes Standard (JJ1017 V3.3), issued by Japanese Society of Radiological Technology (JSRT), which is found at http://www.jsrt.or.jp/.

- Standard Master for Pharmaceutical (known as "HOT code", which lists government approved drugs and provides codes to use for ordering, charging and record keeping), issued by Medical Information System Development Center (MEDIS), which is found at http://www.medis.or.jp/master/hcode

- Standard codes for pharmaceutical units (MR9P) are included as part of the MERIT9 (Medical Record Image Text - Information Exchange) data exchange standard issued by Japan Association for Medical Informatics (JAMI), which is found at http://www.mi.hama-med.ac.jp/emr/medic/merit9_051220.pdf

10.3 All Profiles

The following requirements apply to HL7 messages across all Radiology profiles.

10.3.1 Character Set Codes

All senders and receivers of HL7 transactions:

- shall support the use of two-byte characters in any character field

- shall use the ASCII character set code (ISO IR6) for single-byte characters

940
- shall use Japan Industrial Standard Kanji code (ISO IR87) for two-byte characters. MSH-18 shall be "ISO IR87". Characters not defined in ISO IR87 shall be replaced by phonetic characters, i.e., Kana (Hiragana or Katakana).

- shall use ISO 2022-1994 (JIS-X0202) for switching between single- and two-byte characters, e.g., Kanji, Hiragana, Katakana and alphabet. MSH-20 shall be "ISO 2022-1994".

945
- shall not use ISO IR13.

- should not use ISO IR159.

    Note: The backslash character "\", which is used as the Escape character, appears in Japanese fonts as a "¥" character when viewing the raw byte stream.

10.3.2 PID Segment Usage

950 All senders and receivers of HL7 transactions:

- should put the legal name in PID-5

- shall include the name written in Katakana.

- shall support the name written also in Kanji

- should support the name written also in Roman Alphabet

955
- shall support the Katakana, Kanji, and alphabet appearing in any order.

- shall not use PID-9 (Patient Alias)

- shall represent Japanese addresses by populating component 8 of PID-11 <Other Geographic Designation> with Japanese characters organized as described in https://en.wikipedia.org/wiki/Japanese_addressing_system

960
- shall structure component 8 as a single string without delimiting the subcomponents using a subcomponent delimiter

- should not use components 1, 2, 3 or 4 of PID-11 for Japanese addresses (they do not have appropriate structure/semantics for Japanese addresses), although it is appropriate to use them for non-Japanese addresses.

965
- shall use component 12 of PID-13 and PID-14 <Unformatted Telephone Number> for phone numbers

- should not use components 4, 5 or 6 of PID-13 and PID-14 for phone numbers (they do not have appropriate structure/semantics for Japanese phone numbers)

Example value of PID-5:

970   Yamada^ Taro^^^^^L^A~山田^太郎^^^^^L^I~ヤマダ^タロウ^^^^^L^P

In this example, the order is Alphabet, Kanji and Katakana.

Example value of PID-11:

        ^^^^105-0004^^H^^東京都港区新橋２－５－５

Example of value of PID-13 and 14:

975 ^PRN^PH^^^^^^^^^03-3506-8010

10.3.3 Message Control Codes ("0B")

The IHE Radiology Technical Framework requires that "0B" be present at the beginning of all HL7 messages as part of the Minimal Lower Layer Protocol mandated in RAD TF-2:2.4.1.1.

JRDC v3.0C (a national standard of Japan, proposed by JAHIS and approved by Ministry of
980 Health, Labour and Welfare of Japan) requires omission of "0B" at the initial part of a message.

All senders and receivers of HL7 transactions shall be configurable to operate successfully with and without the beginning "0B" character.

10.4 Scheduled Workflow.b (SWF.b)

The Japanese National Extension adds requirements to SWF.b. The same requirements apply to
985 implementations of SWF with the HL7 v2.5.1 Option (See the IHE Radiology Technical
Framework, Revision 11 (July 24, 2012) or later).

10.4.1 SWF.b – OBX Segment Usage for Common Observations

The observations and observation values in this section are commonly used in Japan.

ADT, Order Placer and Order Filler Actors are recommended to support sending the
990 observations in Table 10.4.1-1 in one or more OBX segments in RAD-1, RAD-2, RAD-4, RAD-12 and RAD-13.

The Observation Code will appear in OBX-3, the Data Type in OBX-2, and the result value in OBX-5.

Note: Allergy information is communicated in an AL1 segment according to HL7 V2.5.

995 Note: Fields for "History of …" may contain a Yes/No, a date, a statement that such information was not requested or is not available or may contain a text description of the history itself such as the specific procedure performed. As a result this field is mostly for human viewing (e.g., by the technologist or the radiologist), not for any kind of automated processing or decision support.

Table 10.4.1-1: Common Observation Identifiers in Japan

Observation Code (OBX-3)	Meaning	English Translation	Data Type (OBX-2)	Observation Value (OBX-5)
01-01	身長	Body height	NM	-
01-02	体重	Body weight	NM	-
01-03	ABO式血液型	ABO blood type	CWE	Table 10.4.1-4
02-01	造影剤副作用	Side effect of contrast media	TX	-
02-02	気管支喘息	Asthma	TX	-

Observation Code (OBX-3)	Meaning	English Translation	Data Type (OBX-2)	Observation Value (OBX-5)
02-03	腎機能障害	Renal dysfunction	TX	-
02-04	胃の手術	History of gastric surgery	TX	-
02-05	大腸の手術	History of colon surgery	TX	-
02-06	胆嚢の手術	History of gall bladder surgery	TX	-
02-07	その他腹部の手術歴	History of abdominal surgery	TX	-
02-08	体内ペースメーカ	Implanted pacemaker	TX	-
02-09	体内金属	Metal in body	TX	-
03-01	HBs抗原	Hepatitis B surface antigen	CWE	Table 10.4.1-2
03-02	HCV抗体	Anti-Hepatitis C Virus antibody	CWE	Table 10.4.1-2
03-03	TPHA法	Treponema PHA	CWE	Table 10.4.1-2
03-04	STS法	Serological Test for Syphilis	CWE	Table 10.4.1-2
03-05	ツ反	PPD skin test	CWE	Table 10.4.1-2
03-06	TB塗抹	TB smear	CWE	Table 10.4.1-2
03-07	TB培養	TB culture	CWE	Table 10.4.1-2
03-08	HIV抗体	HIV antibody	CWE	Table 10.4.1-2
03-09	HTLV−I抗体	HTLV-I antibody	CWE	Table 10.4.1-2
03-10	MRSA	MRSA	CWE	Table 10.4.1-2
03-11	クレアチニン値	Serum creatinine	NM	-
03-12	BUN値	Blood urea nitrogen	NM	-
04-01	聴覚障害	Hearing impairment	CWE	Table 10.4.1-3
04-02	言語障害	Speech disturbance	CWE	Table 10.4.1-3
04-03	視覚障害	Impairment in vision	CWE	Table 10.4.1-3
04-04	運動障害	Motor dysfunction	CWE	Table 10.4.1-3
04-05	意識障害	Disturbance of consciousness	CWE	Table 10.4.1-3

1000

Source: JRDC v3.0C, JHSR 001

ADT, Order Placer and Order Filler Actors are recommended to support sending the observation values in Table 10.4.1-2, Table 10.4.1-3 and Table 10.4.1-4 for the observations indicated in Table 10.4.1-1 in RAD-1, RAD-2, RAD-4, RAD-12 and RAD-13.

The Code Value (left column) will appear in the "Code Value" of OBX-5, the Meaning (middle column) in the "Code Meaning" of OBX-5. The English Translation does not typically appear in messages in Japan. The coding system name shall be "JHSR002"

Note: Observation value of "not tested" is represented by "Unknown" if needed.

Table 10.4.1-2: Common Observation Values for Test Result

Code Value	Meaning	English Translation
0	-	Negative
1	擬陽性	Equivocal
2	＋	Positive
3	＋＋	Moderately positive
4	＋＋＋	Strongly positive

Source: JRDC v3.0C, JHSR 002

Table 10.4.1-3: Common Observation Values for Evaluation Level

Code Value	Meaning	English Translation
SV	重度	Severe
MO	中等度	Moderate
MI	軽度	Mild
U	不明	Unknown

Source: JRDC v3.0C, JHSR 002

Table 10.4.1-4: Common Observation Values for Blood Type

Code Value	Meaning	English Translation
A	A	Blood type A
B	B	Blood type B
O	O	Blood type O
AB	AB	Blood type AB

Source: JRDC v3.0C, JHSR 002

10.4.2 SWF.b – PV1 Segment Usage

ADT, Order Placer and Order Filler Actors shall support sending the values in Table 10.4.2-1, Table 10.4.2-2 and Table 10.4.2-3 in PV1-2, PV1-3 and PV1-4 in RAD-1, RAD-2, RAD-3, RAD-4, RAD-12 and RAD-13.

The Code Value (left column) will appear in the "Code Value" and the Meaning (middle column) may be used when presenting the information to a human. The English Translation does not typically appear in messages in Japan.

Table 10.4.2-1: PV1-2 Patient Class (HL7 Table 0004)

Code Value	Meaning	English Translation
E	救急	Emergency
I	入院患者	Inpatient
O	外来患者	Outpatient
P	事前登録	Preadmit
R	通院患者	Recurring Patient
B	産科来院	Obstetrics
C	商用アカウント	Commercial Account
N	摘応なし	Not Applicable
U	不明	Unknown

Source: JRDC v3.0C

Table 10.4.2-2: PV1-3 Assigned Patient Location, Component 6 Person Location Type (HL7 Table 0305)

Code Value	Meaning	English Translation
C	診察室	Clinic
D	部門	Department
H	在宅	Home
N	病棟	Nursing Unit
O	依頼医の部屋	Provider's Office
P	電話	Phone
S	高度看護施設	Skilled Nursing Facility

Source: JRDC v3.0C

For Patient Class Inpatient, Component 6 shall be N and PV1-3 may be formatted as follows:

<Ward>^<Room>^<Bed>^^^N

For Patient Class Outpatient, Component 6 shall be C and PV1-3 may be formatted as follows:

<Clinic>^^^^^C

For other Patient Class values, the PV1-3 format and values are not further constrained in Japan.

Table 10.4.2-3: PV1-4 Admission Type (HL7 Table 03065)

Code Value	Meaning	English Translation
A	事故	Accident
E	救急	Emergency
L	陣痛と出産	Labor and Delivery
R	通常	Routine
N	新生児（院内で誕生）	Newborn (Birthed in Healthcare Facility)
U	緊急	Urgent
C	選択的	Elective

Source: JRDC v3.0C

10.4.3 SWF.b – TQ1 Segment Usage

1035 Order Placer and Order Filler Actors shall support sending the values in Table 10.4.3-1 in TQ1-9 in RAD-2, RAD-3, RAD-4 and RAD-13.

The Code Value (left column) will appear in the "Code Value" and the Meaning (middle column) may be used when presenting the information to a human. The English Translation does not typically appear in messages in Japan.

1040 **Table 10.4.3-1: TQ1-9 Extended Priority Codes (HL7 Table 0485)**

Code Value	Meaning	English Translation
S	緊急	Urgent, with the highest priority
A	Ｓオーダの後	As soon as possible
R	ルーチン	Routine
P	術前	Preoperative patient, fulfill an order before the planned date of surgery
C	返信（呼び戻し）	Callback
T	時期厳守	Timing is critical. Fulfill order at the specified timing.
PRN	必要に応じて	As needed. Fulfill order when condition is met. The condition must be defined by an ordering provider beforehand.

Source: JRDC v3.0C

10.4.4 SWF.b – Drug Coding with HOT & MR9P

Order Placer and Order Filler Actors shall support using HOT coding for any drugs and MR9P coding (see Table 10.4.4-1) for any drug amounts encoded in RAD-2, RAD-3, RAD-4 and RAD-13. For example contrast in an OBX segment in an order, or consumed drugs in the ZE1 segment.

The coding system name for HOT shall be "HOT9".

The coding system name for MR9P shall be "MR9P".

Table 10.4.4-1: Units of Drug Dose (MR9P)

Code Value	Meaning	English Translation
TAB	錠	Tablet
CAP	カプセル	Capsule
G	グラム	Gram
MG	ミリグラム	Milligram
MCG	マイクログラム	Microgram
L	リットル	Liter
ML	ミリリットル	Milliliter
UNT	単位	Unit
AMP	管、アンプル	Ampule
BAG	袋	Bag
BTL	瓶	Bottle
HON	本	Hon (a unit for counting drugs or drug containers with a stick-like shape)
KO	個	Ko (a unit for counting drugs or drug containers whose unit is not otherwise specified)
PCK	包	Pack
SHT	枚	Sheet
VIL	バイアル	Vial

Source: JRDC v3.0C

10.4.5 SWF.b – Parent & Child Orders

Order Placers shall be able to generate compound orders containing both parent (PA) and child (CH) order components and send them in RAD-2 Placer Order Management.

Order Fillers shall include any compound orders received from the Order Placer into RAD-4 Procedure Scheduled and RAD-13 Procedure Update.

A parent order transmits information common to both the parent order and its child orders. Each child order transmits information specific to that child order. For example the parent order might specify a digital radiography (DR) exam, and child order(s) specify that it is a DR exam of the Abdomen with AP & Lateral views. The parent order sometimes serves as a coarse order, useful for scheduling the modality resource (since the anatomy and views might not be relevant to scheduling) and for showing in the GUI of the EMR as a summary description of the study (it's a DR study). The child order is a refined order that is complete for the tech to perform since the child order also contains all the information in the parent order.

A parent order is indicated by the value "PA" in ORC-1 of an ORC segment. A parent order segment is followed by one or more child order segments.

A child order is indicated by the value "CH" in ORC-1 of an ORC segment. An NW ORC segment is placed before the PA ORC segment.

When child orders are generated by the Order Placer, the Placer Order Number is assigned by the Order Placer. The Order Placer might be configured to use a certain pattern, such as prefixing "999" to the beginning of child order numbers.

In child orders, ORC-8 and OBR-29 shall contain the Placer Order Number of the parent order.

Table 10.4.5-1 shows an example of a single compound order with one parent and two child orders to demonstrate the sequence in which the segments appear and show example values in relevant "linking fields".

Table 10.4.5-1: Parent and Child Order Example

Seg	Order Control (ORC-1)	Comment	Placer Order Number (ORC-2)	Parent (ORC-8)	Placer Order Number (OBR-2)	Parent (OBR-29)
ORC	NW	New Order	"A00"	*blank*		
ORC	PA	1st Parent	"A00"	*blank*		
ORC	CH	1st Child	"A01"	"A00"		
OBR		1st Child			"A01"	"A00"
ORC	CH	2nd Child	"A02"	"A00"		
OBR		2nd Child			"A02"	"A00"

10.4.6 SWF.b – Procedure Coding with JJ1017

Order Placers, Order Fillers and Image Manager/Archives shall support using JJ1017 codes to describe the procedures ordered, procedures scheduled and procedures performed in OBR-4 fields in RAD-2, RAD-3, RAD-4 and RAD-13.

JJ1017-16P codes are used for "parent orders". They are strings of 16 characters where the last 13 characters are zeros.

Other JJ1017 codes are made by combining a 16-character JJ1017-16M code and a 16-character JJ1017-16S code.

The OBR-4 field of a parent order shall contain one JJ1017-16P code.

1085 The OBR-4 field of each of child order shall contain one JJ1017 code (JJ1017-16M + JJ1017-16S, 32 characters) corresponding to a single procedure from the set of procedures included in the parent order.

See Appendix A for examples of JJ1017 usage.

10.4.7 SWF.b – Notification of Patient Presence

1090 Order Fillers shall be able to send a RAD-3 Status Update with a status of IP (In Progress), when triggered by arrival of the patient.

When a patient presents for a study, an operator of the Order Filler (RIS) logs this fact and a RAD-3 message is sent to notify the Order Placer that they can no longer change or cancel the study electronically. Communication with a radiology technician or other relevant personnel in
1095 charge of the study may be required for any "last minute" discontinuation.

10.5 Examples for Japan National Extension

This Appendix provides example messages that illustrate features and requirements of the IHE Japan National Extension as specified in RAD TF-4:10. The examples were translated from the Radiology Data Exchange Standard (JRDC), ver3.0C © JAHIS 2014.

1100 Some message segments are preceded by explanatory comments which would not appear in the message.

In these examples person names are written with the family name first and given name second in accordance with the customs in Japan. In the explanatory text English information is often followed by the corresponding Japanese words in the same order in parentheses in blue text, for
1105 example Tokyo Taro (東京太郎).

10.5.1 Case: Radiography

10.5.1.1 Placing an Order (HIS to RIS)

HIS_ALPHA sends a message for an imaging service request with the message number 100001 to RIS_BETA on the 20th of January, 2005.

1110 MSH|^~\&|HIS_ALPHA||RIS_BETA||20050120||OMG^O19^OMG_O19|100001|P|2.5|||||JPN|ASCII~ISO IR87|| ISO 2022-1994<cr>

The Patient is Tokyo Taro (東京太郎), male, born 14th of December, 1950. The Patient ID is 12345678; the patient's address, preceded by postal code, is 105-0004 Shinbashi 2-5-5, Minato-ku, Tokyo-to (東京都港区新橋２－５－５); and the patient's home telephone number is 03-
1115 3506-8010.

 PID|||12345678^^^^PI||東京^太郎^^^^^L^I~トウキョウ^タロウ^^^^^L^P||19501214|M
 |||^^^^105-0004^^H^^東京都港区新橋2－5－5||^PRN^PH^^^^^^^^^03-3506-8010<cr>

The patient is seen by Dr. Nakada Takashi (中田隆) in the out-patient clinic of the Internal Medicine (内科) department.

1120   PV1||O|01^^^^^C||||112233^中田^隆^^^^^^L^^^^^I||||01<cr>

Dr. Nakada orders radiography of the chest in two projections (AP and LR lateral) and radiography of the abdomen in two projections (AP and LR lateral) at 10:10 AM in 20th of January, 2005. The assigned placer order number is 2005012000100. The blood type (血液型) of the patient is A. The patient has severe (重度) impairment in vision (視力障害).

1125   ORC|NW|2005012000100|||SC||||20050120101000|112233^中田^隆^^^^^^L^^^^^I||
        112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028||||||||||||O<cr>

        TQ1|||||||200501201010||R<cr>

        OBR||2005012000100||1000000000000000^X線単純撮影^JJ1017|||||||||||||
        112233^中田^隆^^^^^^L^^^^^I|||||||||||O|||||WALK<cr>

1130   ORC|PA|2005012000100|||SC||||20050120101000|112233^中田^隆^^^^^^L^^^^^I||
        112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028||||||||||||O<cr>

        TQ1|||||||200501201010||R<cr>

        OBR||2005012000100||1000000000000000^X線単純撮影^JJ1017|||||||||||||
        112233^中田^隆^^^^^^L^^^^^I||||||||||||||||WALK<cr>

1135   OBX|1|CWE|01-03^血液型-ABO式^JHSR001|1|A^A^JHSR002|||||||F<cr>

        OBX|2|CWE|04-03^視覚障害^JHSR001||SV^重度^JHSR002|||||||F<cr>

        ORC|CH|2005012000101|||SC|||2005012000100|20050120101000|
        112233^中田^隆^^^^^^L^^^^^I|||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
        01^内科^MML028||||||||||||O<cr>

1140   TQ1|||||||200501201010||R<cr>

        OBR||2005012000101||
        100000002000002000000010000000000^胸部.X線単純撮影.正面(A→P)^JJ1017|||||||||||||
        112233^中田^隆^^^^^^L^^^^^I|||||||||||||2005012000100|WALK<cr>

        ORC|CH|2005012000102|||SC|||2005012000100|20050120101000|
1145   112233^中田^隆^^^^^^L^^^^^I|||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
        01^内科^MML028||||||||||||O<cr>

        TQ1|||||||200501201010||R<cr>

        OBR||2005012000102||
        100000002000006000000010000000000^胸部.X線単純撮影.側面(L→R)^JJ1017|||||||||||||
1150   112233^中田^隆^^^^^^L^^^^^I|||||||||||||2005012000100|WALK<cr>

        ORC|CH|2005012000103|||SC|||2005012000100|20050120101000|
        112233^中田^隆^^^^^^L^^^^^I|||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
        01^内科^MML028||||||||||||O<cr>

        TQ1|||||||200501201010||R<cr>

1155

OBR||2005012000103||
100000025100020000000010000000000^腹部(KUB).X線単純撮影.正面(A→P)^JJ1017
|||||||||||||112233^中田^隆^^^^^^L^^^^I^|||||||||||||2005012000100|WALK<cr>

ORC|CH|2005012000104|||SC|||2005012000100|20050120101000|
112233^中田^隆^^^^^^L^^^^I||112233^中田^隆^^^^^^L^^^^I|01^^^^^C||||
01^内科^MML028|||||||||||||O<cr>

1160

TQ1|||||||200501201010||R<cr>

OBR||2005012000104||
100000025100060000000010000000000^腹部(KUB).X線単純撮影.側面(L→R)^JJ1017
|||||||||||||112233^中田^隆^^^^^^L^^^^I|||||||||||||2005012000100|WALK<cr>

1165 **10.5.1.2 Radiography Order Response (RIS to HIS)**

In response to the message in A.1.1, RIS_BETA sends a message to HIS_ALPHA on the 20th of January, 2005.

MSH|^~\&|RIS_BETA||HIS_ALPHA||20050120||ORG^O20^ORG_O20|100002|P|2.5|||||JPN|A
SCII~ISO IR87||ISO 2022-1994<cr>

1170

MSA|AA|100001<cr>

10.5.1.3 Conveying the Radiography Order (RIS to PACS)

Following receipt of the message A.1.1, RIS_BETA sends message number 110001 to PACS_GAMMA on the 20th of January, 2005 informing it of the order contents. The Accession Number is A2005012000100 and the Study Instance UID is 1.2.392.1114.2004.543233.1. The

1175 Modality is CR.

MSH|^~\&|RIS_BETA||PACS_GAMMA||20050120||OMI^O23^OMI_O23|110001|P|2.5|||||JPN|
ASCII~ISO IR87||ISO 2022-1994<cr>

PID|||12345678^^^^PI||
東京^太郎^^^^^L^I~トウキョウ^タロウ^^^^^L^P~TOKYOU^TAROU^^^^^L^A||19501214|M|||

1180 ^^^^105-0004^^H^^東京都港区新橋2－5－5||^PRN^PH^^^^^^^^^03-3506-8010<cr>

PV1||O|01^^^^^C||||112233^中田^隆^^^^^^L^^^^I|||01<cr>

ORC|NW|2005012000100|||SC||||20050120101000|112233^中田^隆^^^^^^L^^^^I||
112233^中田^隆^^^^^^L^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

1185 OBR||2005012000100||1000000000000000^X線単純撮影^JJ1017|||||||||||||
112233^中田^隆^^^^^^L^^^^I|||||||||||||||WALK|||||||||||||||
1000000000000000^X線単純撮影^JJ1017<cr>

IPC|A2005012000100||1.2.392.1114.2004.543233.1||CR<cr>

ORC|PA|2005012000100|||SC||||20050120101000|112233^中田^隆^^^^^^L^^^^I|||
1190 112233^中田^隆^^^^^^L^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

OBR||2005012000100||1000000000000000^X線単純撮影^JJ1017|||||||||||||
112233^中田^隆^^^^^^L^^^^^I|||||||||||||||WALK |||||||||||||
1000000000000000^X線単純撮影^JJ1017<cr>

1195 OBX|1|CWE|01-03^血液型-ABO式^JHSR001|1|A^A^JHSR002|||||F<cr>

OBX|2|CWE|04-03^視覚障害^JHSR001||SV^重度^JHSR002|||||F<cr>

IPC|A2005012000100||1.2.392.1114.2004.543233.1||CR<cr>

ORC|CH|2005012000101|||SC|||2005012000100|20050120101000|
112233^中田^隆^^^^^^L^^^^^I||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
1200 01^内科^MML028||||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

OBR||2005012000101||
1000000020000020000000010000000000^胸部.X線単純撮影.正面(A→P)^JJ1017||||||||||||||
112233^中田^隆^^^^^^L^^^^^I|||||||||||||2005012000100|WALK|||||||||||||
1205 1000000020000020000000010000000000^胸部.X線単純撮影.正面(A→P)^JJ1017<cr>

IPC|A2005012000100||1.2.392.1114.2004.543233.1||CR<cr>

ORC|CH|2005012000102|||SC|||2005012000100|20050120101000|112233^中田^隆
^^^^^^L^^^^^I||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028||||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

1210 OBR||2005012000102||
1000000020000060000000010000000000^胸部.X線単純撮影.側面(L→R)^JJ1017||||||||||||||
112233^中田^隆^^^^^^L^^^^^I|||||||||||||2005012000100|WALK|||||||||||||
1000000020000060000000010000000000^胸部.X線単純撮影.側面(L→R)^JJ1017<cr>

IPC|A2005012000100||1.2.392.1114.2004.543233.1||CR<cr>

1215 ORC|CH|2005012000103|||SC|||2005012000100|20050120101000|
112233^中田^隆^^^^^^L^^^^^I||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
01^内科^MML028||||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

OBR||2005012000103||
1220 1000000251000020000000010000000000^腹部(KUB).X線単純撮影.正面(A→P)^JJ1017
|||||||||||||112233^中田^隆^^^^^^L^^^^^I|||||||||||||2005012000100|WALK|||||||||||||
1000000251000020000000010000000000^腹部(KUB).X線単純撮影.正面(A→P)^JJ1017<cr>

ORC|CH|2005012000104|||SC|||2005012000100|20050120101000|
112233^中田^隆^^^^^^L^^^^^I||112233^中田^隆^^^^^^L^^^^^I|01^^^^^C||||
1225 01^内科^MML028||||||||||||||O<cr>

TQ1|||||||200501201010||R<cr>

OBR||2005012000104||
1000000251000060000000010000000000^腹部(KUB).X線単純撮影.側面(L→R)^JJ1017

```
|||||||||||||112233^中田^隆^^^^^^^L^^^^^I|||||||||||||||2005012000100|WALK||||||||||||||
```
1230
```
100000025100060000000100000000000^腹部(KUB).X線単純撮影.側面(L→R)^JJ1017<cr>
```

10.5.1.4 Response to the Conveyed Radiography Order (PACS to RIS)

In response to the message in A.1.3, PACS_GAMMA sends message number 110002 to RIS_BETA on the 20th January, 2005.

```
MSH|^~\&||PACS_GAMMA||RIS_BETA|20050120||ORI^O24^ORI_O24|110002|P|2.5|||||~ISO
```
1235
```
IR87||ISO 2022-1994<cr>
```

```
MSA|AA|110001 <cr>
```

10.5.1.5 Notification of Patient Presence (RIS to HIS)

The patient arrives at the Department of Radiology after RIS_BETA receives the message in
A.1.1. RIS_BETA sends message number 120001 acknowledging the presence of the patient to
1240 HIS_ALPHA at the time of the patient encounter at the Department of Radiology, which is
10:30:45 AM in 20th of January, 2005.

```
MSH|^~\&|RIS_BETA||HIS_ALPHA||20050120133035||OMG^O19^OMG_O19|120001|P|2.5||||
    |JPN|ASCII~ISO IR87||ISO 2022-1994<cr>
```

```
PID|||12345678^^^^PI||
```
1245
```
    東京^太郎^^^^^L^I~トウキョウ^タロウ^^^^^L^P~TOKYOU^TAROU^^^^^L^A||19501214|M|||
    ^^^^105-0004^^H^^東京都港区新橋２－５－５||^PRN^PH^^^^^^^^^03-3506-8010<cr>
```

```
PV1||O|01^^^^^C||||112233^中田^隆^^^^^^^L^^^^^I|||01<cr>
```

```
ORC|SC|2005012000100||||IP||||20050120132918|112233^中田^隆^^^^^^^L^^^^^I||
    112233^中田^隆^^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||O<cr>
```

1250
```
TQ1|||||||200501201010||R<cr>
```

```
OBR||2005012000100||1000000000000000^X線単純撮影^JJ1017|||||||||||||112233^中田^隆
    ^^^^^^^L^^^^^I||||||||||||||I||||WALK<cr>
```

10.5.1.6 Response to Notification of Patient Presence (HIS to RIS)

In response to the message in A.1.5, HIS_ALPHA sends a message number 120002 to
1255 RIS_BETA in the 20th of January, 2005.

```
MSH|^~\&|HIS_ALPHA||RIS_BETA||20050120133103||ORG^O20^ORG_O20|120002|P|2.5|||||
    JPN|
    ASCII~ISO IR87||ISO 2022-1994<cr>
```

```
MSA|AA|120001<cr>
```

1260 ## 10.5.2 Case: CT

10.5.2.1 Placing an Order (HIS to RIS)

HIS_ALPHA sends a message for an imaging service request with the message number 200001
to RIS_BETA on the 20th of January, 2005.

1265
```
MSH|^~\&|HIS_ALPHA||RIS_BETA||20050120||OMG^O19^OMG_O19|200001|P|2.5|||||JPN|
    ASCII~ISO IR87||ISO 2022-1994<cr>
```

The Patient is Toranomonn Ichiro (虎ノ門一郎), male, born 11th of April, 1960. The Patient ID is 22333444; The patient's address preceded by postal code is 105-004 Shinbashi 2-2-5, Minato-ku, Tokyo-to (東京都港区新橋２－２－５); and the patient's home telephone number is 03-3406-8010.

1270
```
PID|||22333444^^^^PI||虎ノ門^一郎^^^^^L^I~とらのもん^いちろう^^^^^L^P||19600411|M|||
    ^^^^105-0004^^H^^東京都港区新橋2－5－5||^PRN^PH^^^^^^^^^03-3506-8010<cr>
```

His attending doctor is Dr. Nakata Takashi (中田隆) of Internal Medicine and the patient is assigned a bed in Room 30 on the 3rd floor of the South Ward (南病棟).

```
PV1||I||3S^30^^^^N||||112233^中田^隆^^^^^^^L^^^^^I||||01<cr>
```

1275 The patient has an allergy including past history of mild adverse reaction to contrast medium (造影剤副作用) and moderate asthma (気管支喘息).

```
AL1|1|DA^薬物アレルギー^HL70127|02-01^造影剤副作用^JHSR001|MI^Mild^HL70128<cr>
```

```
AL1|2|EA^環境アレルギー^HL70127|02-02^気管支喘息^JHSR001|
    MO^Moderate^HL70128<cr>
```

1280 After considering the risk-benefit of the patient's allergy, Dr. Nakada places an order requesting contrast-enhanced CT of the abdomen (上腹部Ｘ線ＣＴ検査) at 9:30AM on the 20th of January, 2005. The placer order number is 2005012000300. The patient has severe hearing impairment and his blood type (血液型) is AB.

1285
```
ORC|NW|2005012000300|||SC||||20050120093000|112233^中田^隆^^^^^^^L^^^^^I||
    112233^中田^隆^^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||I<cr>
```

```
TQ1|||||||200501200930||R<cr>
```

```
OBR||2005012000300||600000000000000^X線CT検査^JJ1017||||||||||||
    112233^中田^隆^^^^^^^L^^^^^I|||||||||||||||WALK<cr>
```

1290
```
ORC|PA|2005012000300|||SC||||20050120093000|112233^中田^隆^^^^^^^L^^^^^I||
    112233^中田^隆^^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||I<cr>
```

```
TQ1|||||||200501200930||R<cr>
```

```
OBR||2005012000300||600000000000000^X線CT検査^JJ1017||||||||||||
    112233^中田^隆^^^^^^^L^^^^^I|||||||||||||||WALK<cr>
```

```
OBX|1|CWE|01-03^血液型-ABO 式^JHSR001|1|AB^AB^JHSR002|||||||F<cr>
```

1295
```
OBX|2|CWE|04-01^聴覚障害^JHSR001||SV^重度^JHSR002|||||||F<cr>
```

```
ORC|CH|2005012000301|||SC|||2005012000300|20050120093000|
    112233^中田^隆^^^^^^^L^^^^^I|||112233^中田^隆^^^^^^^L^^^^^I|01^^^^^C||||
    01^内科^MML028|||||||||||||I<cr>
```

```
TQ1|||||||200501200930||R<cr>
```

1300
```
OBR||2005012000301||600010025500000000000000000000000^上腹部X線CT検査^JJ1017
|||||||||||112233^中田^隆^^^^^^L^^^^I||||||||||||||2005012000300|WALK<cr>
```

Contrast medium is determined to be Iopamiron 300 61.24% 100 ml (HOT9 code: 111836001) by Dr. Nakada.

1305   NOTE: The ordering doctor may determine details of the imaging study, particularly in a healthcare facility where radiologists are unavailable.

```
OBX|1|ZRD|DE-02^薬品^JHSR006||111836001^イオパミロン３００６１．２４％１００mL
^HOT9^1^HON&本&MR9P||||||O<cr>
```

10.5.3 Case: Ultrasonography

1310   ### 10.5.3.1 Placing an Order (HIS to RIS)

HIS_ALPHA sends a message for an imaging service request with the message number 3000001, to RIS_BETA at 12:50:25 on the first of August, 2005.

```
MSH|^~\&|HIS_ALPHA||RIS_BETA||20100801125025||OMG^O19^OMG_O19|300001|P|2.5||||
|JPN|ASII~ISO IR87||ISO 2022-1994<cr>
```

1315   The Patient is Tokushima Naomi (徳島尚美), female, born 11th of September, 1982. The Patient ID is 3330000333; the patient's address, preceded by postal code, is 105-0004 Shinbashi 2-2-5, Minato-ku, Tokyo-to (東京都港区新橋２－５－５); and the patient's home telephone number is 03-3506-8010.

```
PID|||3330000333^^^^PI||徳島^尚美L^I~トクシマ^ナオミ^^^^^L^P||9820911|F|||
```
1320
```
^^^^105-0004^^H^^東京都港区新橋２－５－５||^PRN^HP^^^03-3506-8010<cr>
```

The patient visits an out-patient clinic of Obstetrics (産科) and is seen by Dr. Noriko Akita (秋田典子).

```
PV1||O|||||5559999555^秋田^典子^^^^^^L^^^^^I|||24<cr>
```

Dr. Akita orders an obstetric ultrasonography of the fetus at 11:25 in the 1st of August, 2010.
1325   The Placer order number is 201081100300. The Patient blood type (血液型) is B, body height (身長) of 158 cm, and body weight (体重) is 65 kg.

```
ORC|NW|20100800100300|||SC||||20100801112555|5559999555^秋田^典子^^^^^^L^^^^^I||
5559999555^秋田^典子^^^^^^L^^^^^I|24^^^^^C||||24^産科^MML028|||||||||||||O<cr>
```

```
TQ1|||||||201008011125||R<cr>
```

1330
```
OBR||2010080100300||99A000000000000^経皮的超音波検査^JJ1017||||||||||||
5559999555^秋田^典子^^^^^^L^^^^^I|||||||||||||||WALK<cr>
```

```
ORC|PA|2010080100300|||SC||||20100801112555|5559999555^秋田^典子^^^^^^L^^^^^I||
5559999555^秋田^典子^^^^^^L^^^^^I|24^^^^^C||||24^産科^MML028|||||||||||||O<cr>
```

```
TQ1|||||||201008011125||R<cr>
```

1335

```
OBR||2010080100300||99A000000000000^経皮的超音波検査^JJ1017|||||||||||
    5559999555^秋田^典子^^^^^^^L^^^^^I||||||||||||||||WALK<cr>
```

```
OBX|1|CWE|01-03^血液型-ABO 式^JHSR001|1|B^B^JHSR002|||||||F<cr>
```

```
OBX|2|NM|01-01^身長^JHSR001||158|cm|||||F<cr>
```

```
OBX|3|NM|01-02^体重^JHSR001||65|kg|||||F<cr>
```

1340

```
ORC|CH|2010080100301|||SC|||2010080100300|20100801112555|
    5559999555^秋田^典子^^^^^^^L^^^^^I|||5559999555^秋田^典子^^^^^^^L^^^^^I|24^^^^^C||||
    24^産科^MML028|||||||||||||O<cr>
```

```
TQ1|||||||201008011125||R<cr>
```

```
OBR||2010080100301||
```
1345
```
    99A00005550000000000000000000000000^胎児.超音波検査^JJ1017|||||||||||||
    5559999555^秋田^典子^^^^^^^L^^^^^I|||||||||||||||2010080100300|WALK<cr>
```

10.5.4 Case: Nuclear Medicine

10.5.4.1 Placing an Order (HIS to RIS)

HIS_ALPHA sends a message requesting a nuclear medicine study with the message number
1350   4000001 to RIS_BETA at 10:20:15 AM on the 18th of January, 2005.

```
MSH|^~\&|HIS_ALPHA||RIS_BETA||20050118102015||OMG^O19^OMG_O19|400001|P|2.5||||
    |JPN|ASCII~ISO IR87||ISO 2022-1994<cr>
```

The Patient is Nasuno Hajime (那須野一), male, born 10th of August, 1970. The Patient ID is
98765432; the patient's address, preceded by postal code, is 105-0004 Shinbashi 2-2-5, Minato-
1355   ku, Tokyo-to (東京都港区新橋２－２－５); and the home telephone number is 03-3506-8010.

```
PID|||98765432^^^^PI||那須野^一^^^^^L^I~なすの^はじめ^^^^^L^P||19700810|M||||
    ^^^^105-0004^^H^^東京都港区新橋2－2－5||^PRN^PH^^^^^^^^03-3506-8010<cr>
```

The patient is seen by Dr. Sasaki Jirou (佐々木治朗) of the Internal Medicine department and is
assigned a bed in room 35 on the third floor of the south ward (南病棟).

1360
```
PV1|||I|3S^35^^^^N||||112255^佐々木^治朗^^^^^^^L^^^^^I||||01<cr>
```

Dr. Sasaki places an order for a brain perfusion SPECT with 99mTc at 10:20:00 on the 18th of
January, 2005. The order is scheduled at 15:30 in the 20th of January, 2005 with the placer order
number of 20050120004. The Patient blood type is O.

```
ORC|NW|2005011800400|||SC||||20050118102000|112255^佐々木^治朗^^^^^^^L^^^^^I||
```
1365
```
    112255^佐々木^治朗^^^^^^^L^^^^^I|01^^^^^C||||01^内科^MML028|||||||||||||I<cr>
```

```
TQ1|||||||200501201530||R<cr>
```

```
OBR||2005011800400||84J0000000000000^シンチグラム^JJ1017|||||||||||||
    112255^佐々木^治朗^^^^^^^L^^^^^I||||||||||||||||WALK<cr>
```

ORC|PA|2005011800400|||SC||||2005011810200|112255^佐々木^治朗^^^^^^L^^^^^|||
112255^佐々木^治朗^^^^^^L^^^^^|I|01^^^^^C||||01^内科^MML028|||||||||||||I<cr>

TQ1|||||||200501201530||R<cr>

OBR||2005011800400||84J0000000000000^シンチグラム^JJ1017||||||||||||
112255^佐々木^治朗^^^^^^L^^^^^I|||||||||||||||WALK<cr>

OBX|1|CWE|01-03^血液型-ABO 式^JHSR001||O^O^JHSR002||||||F<cr>

ORC|CH|2005011800401|||SC|||2005011800400|20050118102000|
112255^佐々木^治朗^^^^^^L^^^^^I|||112255^佐々木^治朗^^^^^^L^^^^^I|01^^^^^C||||
01^内科^MML028|||||||||||||I<cr>

TQ1|||||||200501201530||R<cr>

OBR||2005011800401||
84J440060100000000000410000000000^シンチグラム.血流.脳.99mTc^JJ1017|||||||||||||
112255^佐々木^治朗^^^^^^L^^^^^I||||||||||||2005011800400|WALK<cr>

10.5.5 Case: Angiography

10.5.5.1 Placing an Order (HIS to RIS)

HIS_ALPHA sends a message requesting coronary angiography with the message number 500001 to RIS_BETA at 10:11 in the 20th of January, 2005.

MSH|^~\&|HIS_ALPHA||RIS_BETA||20050120101100||OMG^O19^OMG_O19|500001|P|2.5||||
|JPN|ASCII~ISO IR87||ISO2022-1994<cr>

The Patient is Hukuoka Chihiro (福岡千尋), female, born 21st of October, 1980. The Patient ID is 97531111; the patient's address, preceded by postal code, is 105-0004 Shinbashi 2-2-5, Minato-ku, Tokyo-to (東京都港区新橋２－５－５); and the patient's home telephone number is 03-3506-8010.

PID|||97531111^^^^PI||フクオカ^チヒロ^^^^^L^P~福岡^千尋^^^^^L^I||19801021|F|||
^^^^105-0004^^H^^東京都港区新橋2－5－5||^PRN^PH^^^^^^^^^03-3506-8010<cr>

The patient is seen by Dr. Tanaka Ichiro (田中一郎) of Cardiology (循環器科) and is assigned a bed in room 21 of the E02 ward.

PV1||I|E02^21^^^^N||||112235^田中^一郎^^^^^^L^^^^^I||||08<cr>

Dr. Takahashi Kazushi (高橋和志) orders a coronary angiography and embolization (for coronary arterio-venous fistula) at 10:10 in the 20th of January, 2005. The order is scheduled at 16:50 in the 20th of January, 2005 with the placer order number of 2005012000300. The Patient blood type is O. The patient has severe impairment in vision.

ORC|NW|2005012000300|||SC||||20050120101000|112234^高橋^和志^^^^^^L^^^^^|||
112234^高橋^和志^^^^^^L^^^^^I|08^^^^^C||||08^循環器科^MML028|||||||||||||I<cr>

TQ1|||||||200501201650||R<cr>

1405
```
OBR||2005012000300||3000000000000000^X線血管撮影^JJ1017||||||||||||
    112234^高橋^和志^^^^^^L^^^^I|||||||||||||||WALK<cr>
```

```
ORC|PA|2005012000300|||SC||||20050120101000|112234^高橋^和志^^^^^^L^^^^I|||
    112234^高橋^和志^^^^^^L^^^^I|08^^^^^C||||08^循環器科^MML028||||||||||||I<cr>
```

```
TQ1|||||||200501201650||R<cr>
```

1410
```
OBR|1|2005012000300||3000000000000000^X線血管撮影^JJ1017||||||||||||
    112234^高橋^和志^^^^^^L^^^^I|||||||||||||||WALK<cr>
```

```
OBX|1|CWE|01-03^血液型-ABO式^JHSR001|1|A^A^JHSR002||||||F<cr>
```

```
OBX|2|CWE|04-05^意識障害^JHSR001||SV^重度^JHSR002||||||F<cr>
```

```
ORC|CH|2005012000301|||SC|||2005012000300|20050120101000|
    112234^高橋^和志^^^^^^L^^^^I||112234^高橋^和志^^^^^^L^^^^I|08^^^^^C||||
```
1415
```
    08^循環器科^MML028||||||||||||I<cr>
```

```
TQ1|||||||200501201650||R<cr>
```

```
OBR||2005012000301||
    3003100474020000000000010000000000^X線血管撮影.血管塞栓術冠動脈仰臥位^JJ1017
    ||||||||||||112234^高橋^和^^^^^^L^^^^I|||||||||||||2005012000300|WALK<cr>
```

1420 ## 10.5.6 Case: Patient Information

10.5.6.1 Patient Update (HIS to RIS)

HIS_ALPHA sends message number 720001 to RIS_BETA acknowledging the change in the patient demographics at 10:30:20 in the 25th of October.

1425
```
MSH|^~\&|HIS_ALPHA||RIS_BETA||20081025103020||ADT^A08^ADT_A01|820001|P|2.5|||||J
    PN|ASCII~ISO IR87||ISO 2022-1994<cr>
```

The Patient is Kagoshima Taro (鹿児島太郎), male, born 14th of February, 1959. The Patient ID is not changed and is 4012345678. The patient's address, preceded by postal code, is 105-0004 Shinbashi 2-2-5, Minato-ku, Tokyo-to; and the patient's phone number is 03-3506-8010.

```
EVN||20081025103020<cr>
```

1430
```
PID|||4012345678^^^^PI||鹿児島^太郎^^^^^L^I~カゴシマ^タロウ^^^^^L^P||19590214|M|||
    ^^^^105-0004^^H^^東京都港区新橋2－5－5||^PRN^PH^^^^^^^^^03-3506-8010<cr>
```

The patient is seen by Dr. Shibuya Takashi (渋谷隆) at the outpatient clinic of Internal Medicine (内科).

```
PV1||O||||||11225533^渋谷^隆^^^^^^L^^^^I||||01<cr>
```

1435 The blood type (血液型) of the patient is A. The patient's body height (身長) and weight (体重) are 168 cm and 55 kg. The patient has severe (重度) impairment in vision (視覚障害).

```
OBX|1|CWE|01-03^血液型-ABO 式^JHSR001|1|A^A^JHSR002||||||F<cr>
```

```
OBX|2|NM|01-01^身長^JHSR001||168|cm|||||F<cr>
```

OBX|3|NM|01-02^体重^JHSR001||55|kg|||||F<cr>

1440   OBX|4|CWE|04-03^視覚障害^JHSR001||SV^重度^JHSR002||||||F<cr>

The patient has a severe adverse reaction to contrast media (造影剤副作用) and has moderate asthma (気管支喘息).

AL1|1|DA^薬物アレルギー^HL70127|02-01^造影剤副作用^JHSR001|SV^Severe^HL70128

AL1|2|EA^環境アレルギー^HL70127|02-02^気管支喘息^JHSR001|MO^Moderate^HL70128

1445