

National Extension

**Note : Sentences written in red denote difference in JAHIS v2..3 and IHE.**

**Sentences written in blue should be confirmed by JAHIS.**

### **IHE Japan**

Information exchange between Hospital Information System and Radiology Information System is defined in Radiology Data Exchange Standard v.2.3 (<http://www.jahis.jp/wp-content/uploads/st08-004.pdf>) issued by Japanese Association of Healthcare Information System Industry (RDES by JAHIS), which is adopted as one of the national standards by the Ministry of Health, Labor and Welfare of Japan. Following descriptions are based on RDES by JAHIS.

### **Referenced Standards**

IHE Japan depends on HL7 v2.5 and DICOM 3.0. Thus IHE Radiology Technical Framework, Revision 11 (July 24, 2012) with HL7 v2.5.1 Option is required in Japan.

HL7 v2.3 is neither supported nor needed except for OSQ/OSR. These messages will be deleted from revised version of RDES by JAHIS because removal of OSQ/OSR is explicitly written in RDES by JAHIS v2.3.

### **Character set codes**

All transactions of HL7 shall support two-byte characters. ASCII character set code (ISO IR6) shall be employed for single-byte characters. Japan Industrial Standard Kanji code (ISO IR87) shall be employed for two-byte characters. Thus backslash is replaced with “¥”. Escape character is “¥” under the ISO IR87. MSH-18 shall be "ISO IR87".

Escape sequence

Expression	meaning	IHE
¥F¥	Field separator	
¥S¥	Component separator	^
¥T¥	Subcomponent separator	&
¥R¥	Repetition separator	-
¥E¥	Escape character	¥

JIS -X0202 (ISO/IEC 2022-1994) shall switch among groups of characters in the character set, e.g., Kanji (Chinese letter), Hiragana, Katakana, and alphabet. MSH-20 shall be "ISO 2022-1994".

ISO IR13 shall not be used. Use of ISO IR159 is not recommended. Characters not defined in ISO IR87 shall be replaced with characters of similar shape (and preferably same pronunciation), or phonetic characters (Hiragana or Katakana) coding the same pronunciation.

### **PID segment mapping**

**PID-5:** Legal name, name appeared in the national registry, is preferred. Name written in Katakana is required. Name in Kanji and Alphabet is recommended to be used. Order of name expressions in Katakana, Kanji, and alphabet is irrelevant.

Example: Yamada^ Tarou^^^^L^A~山田^太郎^^^^L^|~ヤマダ^タロウ^^^^L^P

In this example, Name expressions in Alphabet, Kanji and Katakana appeared in order.

**PID-11:** Generally "Si" or "Shi" is mapped to <City> (Component 3). Exceptions are "Ku" of Tokyo, Osaka and Kyoto, which are also mapped to <City> (Component 3). Other "Ku" under "Si" or "Shi" is included in <Street address> (Component 1).

"Ken", which means prefecture, "To" (only Tokyo), "Hu" (only both Kyoto and Osaka) and "Dou" (only Hokkaidou) are mapped to <State or Province> (Component 4).

Component 8, <Other Geographic Designation> shall be used where there is no separation of street address and city.

**PID-13, PID-14:** Use component 12 <Unformatted Telephone Number> for phone number.

**PID-12, PID-15, PID-17, PID-19, PID-20, PID-22, PID-24, PID-25, PID-26, PID-27, PID-35, PID-36, PID-37, PID-38, PID-39:** Not used.

### **PV1 segment mapping**

**PV1-2:** Same as HL7 definition.

**PV1-3:** Component 6 <person location type> is C, which denotes that a patient is in outpatient clinic, or D, which means that a patient is in a certain department such as radiology, laboratory medicine etc., for outpatients. N is used for inpatients.

**PV1-10:** Clinics where a patient receives care. This component is **somewhat different concept from that of PV1-10 (hospital service) in IHE**, but very close (and equal in majority of cases). **ORC-17 (Entering Organization) will have the same value as PV1-10 when an enterer is a doctor.**

Examples of PV1-10 values: Internal Medicine, Pediatrics, Orthopedics, Surgery, Dermatology, Radiology, Laboratory Medicine.

### **Message Control**

Opening block before MSH segment of a message shall be omitted. Message types utilized in transactions are indicated in a following table.

Message definition	Message type	Trigger event	Event type
Patient Query	QRY/ADR	Query for a patient	A19
Feed Patient Status	ADT/ACK		
		Admission	A01
		Transfer	A02
		Discharge	A03
		Register/Update	A08
		Leave for absence	A21
		Return from Leave	A22
		Cancel admission	A11
		Cancel Transfer	A12
		Cancel Discharge	A13
		Update Patient	A31
		Cancel Leave	A52
		Cancel Return	A52
Order Status Query	OSQ/QSR*	Query for Order Status	Q06
Imaging service request	OMG/ORG	General Order Message	O19/O20
Procedure Notification	OMI/ORI	Imaging Order Message	O23/O24
Query for results	QRY/ORF	QRY/ORF	R02, R04
Arrival Notification	ORU/ACK	Order Result Message	R01
Performed Procedure	OMI/ORI	Imaging Order Message	Z23/Z24

\* OSQ/QSR will be deleted in the next version of JAHIS radiology Data Exchange Standards

### Optionality of segment components of a message

Optionality is defined as follows.

HL7	IHE-J	Description	摘要
R	R	Required	必須
O	O	Option	任意
C	C	Conditioned	条件付
X	X	Not supported	使用不可
B	B	Backward Compatibility	旧版対応
	N	Ordinary not used	通常使用しない
			(施設内でのみ使用)

## Usage of AL1 segment

Allergy information of AL1 may be left blank enabling omission of AL1 segment from a message. However, allergy information shall be conveyed as an item of patient profiles in OBX segment defined in the Table JSHR001.

Table JSHR001

Value	Description	Translation
01-01	身長	Body height (cm)
01-02	体重	Body weight (kg)
01-03	A B O 式血液型	ABO blood tyoe
02-01	造影剤副作用	Past history of adverse reaction to contrast media
02-02	気管支喘息	Asthma
02-03	腎機能傷害	Renal dysfunction
02-04	胃部の手術	Past history of gasgtric surgery
02-05	大腸の手術歴	Past history of colonic surgery
02-06	胆嚢の手術歴	Past history of gall bladder surgery
02-07	その他の腹部の手術歴	Past history of other abdominal surgery
02-08	体内ペースメーカー	Implanted pacemaker
02-09	体内金属	Metal in the body
03-01	HBs 抗原	HBs antigen
03-02	HCV 抗体	HCV antibody
03-03	TPHA 法	TPHA
03-04	STS 法	STS
03-05	ツ反	PPD
03-06	TB 塗沫	TB smear
03-07	TB 培養	TB culture
03-08	HIV 抗体	HIV antibody
03-09	HTLV-1 抗体	HTLV-1 antibody
03-10	MRSA	MRSA
03-11	クレアチニン値	Creatinine
03-12	BUN 値	BUN
04-01	聴覚障害	Hearing impairment
04-02	視覚障害	Visuzl impairment

04-03	言語障害	Speech disturbance
04-04	運動障害	Motor dysfunction
04-05	意識障害	Consciousness disturbance

### Time Stamp

Date and time shall be determined and expressed by Japan Standard Time. Offset from World Standard Time may not be sent. There is no time difference within the territory of Japan.

### Usage of TQ segment

Only TQ-9 is required. Others are not used. Priority code is defined in the RDES by JAHIS as follows.

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

### \*Note

**IHE defines priority code as follows and does not allow addition of codes.**

HL7 Status	DICOM Status
S - STAT	STAT
A - ASAP	HIGH
R - Routine	ROUTINE
P - Pre-op	HIGH
C - Callback	HIGH
T - Timing	MEDIUM

### Addition of new segment for detailed information exchange

Detailed billing and material information is conveyed by ZRD segment in OBX, and by ZE1 and ZE2 segments in OMI message with event type of O23. These segments and event type are defined in RDES by JAHIS v2.3 as a national standard of Japan.

## 1. ZRD segment

ZRD segment conveys the information of drug and film used in a procedure performed at an acquisition modality. ZRD segment comprised of six components: <identifier (ST)>^<text (ST)>^<name of coding system (IS)>^<quantity (NM)>^<unit (CWE)>^<film partition number (NM)>. The component of <unit> have five subcomponents; <identifier>^<text>^<name of coding system>^<alternative text>^<alternative coding system>.

IHE-J recommends HOT coding system (<http://www2.medis.or.jp/master/hcode/>) for identifier of drug since the coding system is one of the national standards of Ministry of Health, Labor and Welfare of Japan.

Identifier of unit of drug dose is defined in the RDES by JAHIS as in the following table. Name of the coding system, which is spelled fully as MERRIT-9 v1.1, shall be “MR9P”.

Table: Unit of drug dose (MERRIT-9 v1.1)

Value	Description	摘要
TAB	Tablet	錠
CAP	Capsule	カプセル
G	gram	グラム
MG	milligram	ミリグラム
MCG	microgram	マイクログラム
L	litter	リットル
ML	mililitter	ミリリットル
UNT	unit	単位
AMP	ampule	アンプル
BAG	bags	袋
BTL	bottle	瓶
HON	unit for counting drug shaped as stick, or supplied in a stick-like container	本
KO	unit for counting shaped object not listed otherwise, or supplied in a container not otherwise specified	個
PCK	Pack	包
SHT	Sheet	毎
VIL	Vial	バイアル

## 2. ZE1, ZE2 segments

ZE1 and ZE2 segments and event type of O23 are created for use in OMI message to convey billing and material information.

Property of ZE1 is tabulated below.

SEQ	LEN	DT	OPT	Japan	RP/#	TBL#	ITEM#	ELEMENT MAME	Note
1	4	SI		O			ZE-1	Set Id	
2	20	IS		R			ZE-2	Control code	
3	483	CWE		R			ZE-3	Procedure	
4	16	NM		O			ZE-4	Number of procedures	
5	483	CWE		0			ZE-5	Billing info.	
6	292	JCC		C			ZE-6	Healthcare practitioner category	
7	3002	XCN		O	Y		ZE-7	Healthcare practitioner	
8	20	IS		C			ZE-8	Material category	
9	250	ZRD		O	Y		ZE-9	Materria lused	
10	850	XTN		O			ZE-10	Contact info.	
11	199	ST		O			ZE-11	Performed comment field	
12	199	XT		O			ZE-12	Billing comment field	

### Optionality

R – Required

O – Optional

C – Conditional on the trigger event or on some other field(s).

X – Not used with this trigger event

B – Left for backward compatibility with previous version of HL7

**N – Not used usually. Use only within an institution**

Repetition

Y – the field may be repeated indefinitely or specified times

(Integer) – Repeat the field up to the times as specified by the integer

Value defined in Table JSHR003 shall be used for ZE1-2-Control Code.

Values defined in Table JSHR004 and Table JSHR005 shall be used for ZE1-6-Healthcare Practitioner Category.

Value defined in Table JSHR006 shall be used for ZE1-8-Material Category.

Table	JSHR003 Control Code	
Value	Description	摘要
PL	Procedure planned, not yet done	予定
RS	Procedure completed	実績

Table JSHR004 Healthcare Practitioner Job Code

Value	Description	摘要	Note
DR-01	Order provider	依頼医	Same as OBR-16, ORC-12 (Ordering Provider)
DR-02	Doctor actually performed a procedure	実施医	Different from OBR-34 (Scheduled performing physician's name)
DR-03	Anesthesiologist	麻酔科医	
TC-01	Technician	技師	
NS-01	Nurse	看護師	
NS-02	Attending Nurse	付添い看護師	
NS-03	Midwife	助産部	

Table JSHR005 Healthcare Practitioner Employment

Value	Description	摘要
EM-01	Full-time employee	正従業員
EM-02	Part-time employee	契約従業員
EM-03	Temporary employee	臨時従業員

Table JSHR006 Material Category

Value	Description	摘要
DE-01	Film	フィルム
DE-02	Drug	薬品
DE-03	Instrument	器財
DE-04	Healthcare material	材料
DE-05	Acquisition modality	撮影装置



Property of ZE2 is tabulated below.

SEQ	ELEMENT NAME	NOTE
1	Set ID	1 (Equal to Set ID of ZE1)
2	Tube voltage	
3	Tube current	
4	Distance	
5	Time	

#### User defined tables for OBX segment

User defined tables are elaborated for transmitting detailed information. Information **not listed in the HL7 predefined tables** may be transmitted by codes shown in the following tables in OBX segment of ordering messages. Allergy information shall be described in this segment.

**\*Note: OBR-13-Relevant Clinical Info is used in IHE for transmitting the same kind of information described in Table JSHR001 and JSHR002. Also AL1 is used to transmit allergy information in IHE.**

Table JSHR001

Value	Description	Translation
01-01	身長	Body height (cm)
01-02	体重	Body weight (kg)
01-03	A B O式血液型	ABO blood tyoe
02-01	造影剤副作用	Past history of adverse reaction to contrast media
02-02	気管支喘息	Asthma
02-03	腎機能傷害	Renal dysfunction
02-04	胃部の手術	Past history of gasgtric surgery
02-05	大腸の手術歴	Past history of colonic surgery
02-06	胆嚢の手術歴	Past history of gall bladder surgery
02-07	その他の腹部の手術歴	Past history of other abdominal surgery
02-08	体内ペースメーカ	Implanted pacemaker

02-09	体内金属	Metal in the body
03-01	HBs 抗原	HBs antigen
03-02	HCV 抗体	HCV antibody
03-03	TPHA 法	TPHA
03-04	STS 法	STS
03-05	ツ反	PPD
03-06	TB 塗沫	TB smear
03-07	TB 培養	TB culture
03-08	HIV 抗体	HIV antibody
03-09	HTLV-1 抗体	HTLV-1 antibody
03-10	MRSA	MRSA
03-11	クレアチニン値	Creatinine
03-12	BUN 値	BUN
04-01	聴覚障害	Hearing impairment
04-02	視覚障害	Visual impairment
04-03	言語障害	Speech disturbance
04-04	運動障害	Motor dysfunction
04-05	意識障害	Consciousness disturbance

Table	JSH002 Observation value	
Value	Description	摘要
0	negative test result	-
1	equivocal	擬陽性
2	positive test result	+
3	moderately positive	++
4	strongly positive	+++
U	not tested	不明
SV	Severe	重度