Common Specification for output data of Ophthalmic Examination Equipment 01　(JOIA Std.)

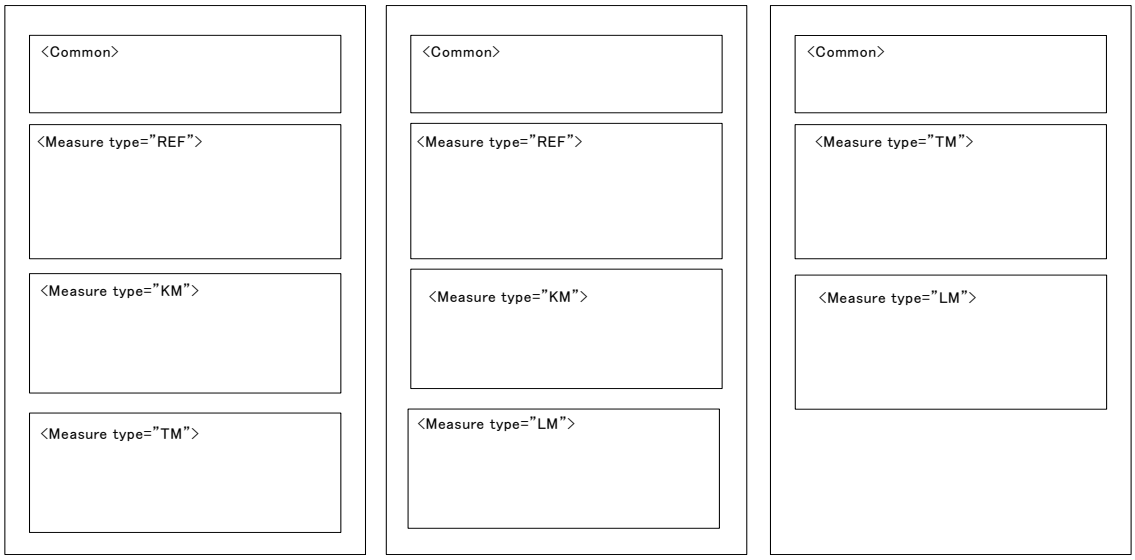
- Common Specification for output data of Refractometer / Keratometer / Tonometer and Lensmeter –

1. Data classifications

1-1. Handling of Files

It is possible to handle multiple data classifications such as refractometer, keratometer, tomometer and lensmeter within one XML file. Each data classification shall only be sent once in a single file (for example, it is forbidden to send two <LM> data classification in one file). The data of refractometer, keratometer, tonometer and lensmeter can be handled in one file or they can be separated in individual files. The file has <Ophthalmology> tag as a top tag, and tag of each data classification exists in the top tag. The example of data classification constitution in the XML file is shown as below.

■Example of data classification constitution in the file



* The file has ＜Ophthalmology＞tag as a top tag.
* It is possible to handle all the data classifications in one file, or they can be separated by files.
* It is also possible to handle the data classifications specified in the common specification for data output of other Ophthalmic Examination Equipment (02 -) in one file.
* Implementations may encounter data classifications that are not included in the JOIA

specification, therefore, implementations SHALL ignore non-recognized data classifications and process the known data classifications accordingly.

1-2. Handling of data classifications

The data classifications of refractometer, keratometer, tonometer and such are maintained as attribute value (type) of ＜Measure＞ tag.

■Attribute value and classification

Attribute value (type)	Data classification
REF	Refractometer data
KM	Keratometer data
TM	Tonometer data
LM	Lensmeter data
・	・

The example with refractmeter, keratometer, tonometer and lensmeter data are shown as below.

ex) In the case of having refractometer, keratometer, tonometer and lensmeter data.

```
<Measure type="REF">      <--- Refractometer data
        ・・・・
</Measure>
<Measure type="KM">       <--- Keratometer data
        ・・・・
</Measure>
<Measure type="TM">       <--- Tonometer data
        ・・・・
</Measure>
<Measure type="LM">      <--- Lensmeter data
```

1-3. Character code

The character code within XML file is UTF-8 or UTF-16.

1-4. Description of style sheet

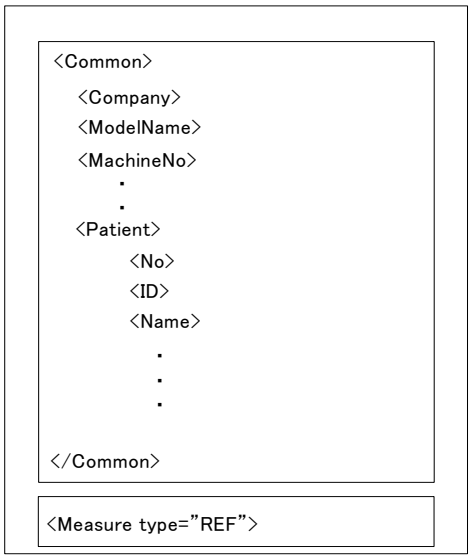
Description of the style sheet in the XML file is optional.

2. Common data

2-1. Handling of common data

Common data such as patient information is included in ＜Common＞ element. One common data exists in one file. (See "４． Tag definition" on common data elements)

■Example of common data in a file



3. Data definition

3-1. Data type definition

Tag elements of each data classification such as refractometer, keratometer, tonometer and lensmeter are defined by XML schema. Data types of values on each tag are also defined by the schema. Moreover, it is determined by the schema definition whether it is a required tag or permit overlaps.

3-2. Handling of unit

The unit of the numerical data is described as attribute value "Unit".

ex) Sphere data of refractometer

<Sphere unit="D">0.25</Sphere>

4. Tag definition

The items described in the necessity field have following meanings.

Any: Tags are optional. They can be omitted.

No sign: No tags or values are necessary.

△: Tags are necessary even if no value is entered.

○: Tags and values are necessary.

* Indicates that lower tags are necessary when an upper tag exists.

■Ophthalmology tag

Tag name	Description	Data type	Necessity
<Ophthalmology>	Ophthalmic data	-	○

■Common data

Tag name		Description	Data type	Necessity
<Common>		Common tag	-	○
	<Company>	Company name	String (64 characters)	○
	<ModelName>	Model name	string (64 characters)	○
	<MachineNo>	No. for distinction among the devices of the same model.	string (64 characters)	△
	<ROMVersion>	No. for distinction among the models with the same ROM version.	string (64 characters)	△
	<Version>	XML specifications version (fixed)	string (64 characters)	○
	<Date>	Date (year, month, day)	date	○
	<Time>	Time (hour, minute, second)	time	○

<Patient>		Patient	-	○
	<No.>	Patient No. (number of the order of examination)	string (64 characters)	△
	<ID>	Patient ID	string (64 characters)	○
	<PatientIDSource> *1	Patient ID Source	String (unreliable, manual, auto device, auto **patient** list)	
	<FirstName>	Patient's first name	string (64 characters)	△
	<MiddleName>	Patient's middle name	string (64 characters)	△
	<LastName>	Patient's last name	string (64 characters	△
	<Sex>	Patient's sex	string (M, F, O)	△
	<Age>	Patient's age	int	△
	<DOB>	Patient's date of birth	date	△
	<NameJ1>	Patient's name in other languages	string (64 characters)	△
	<NameJ2>	Patient's name in other languages	string (64 characters)	△

<Operator>		Operator	-	
	<No.>	Operator No.	string (64 characters)	△
	<ID>	Operator ID	string (64 characters)	△

Unique tag of each company can be optionally defined here.	any

*1: For data element < PatientIDSource >, the terms have the following meaning:

"unreliable" = not a valid Patient ID (i.e., a device generated exam number)

"manual" = Patient ID manually entered on the device

"auto device" = Patient ID automatically entered on the device (i.e., barcode scanner, etc.)

"auto patient list" = Patient ID selected from a patient list generated by the Patient Source in the clinic (i.e., Practice Management System)

■Refractometer data

Tag name		Description	Data type	Necessity
<Measure type="REF">		Measurement type tag	-	○
	<VD unit="mm">	Corneal vertex distance	double	○
	<DiopterStep unit="D">	Diopter increment	double	△
	<AxisStep unit="deg">	Angle increment	int	△
	<CylinderMode>*1	Cylinder mode (-, +, mix)	string(-,+,mix)	△
	<CycloplegicMode>	Cycloplegic Mode	string(cycloplegic, non-cycloplegic)	

<REF>				
<R>			Right eye measurement value	-	
	<List No=" ">		Measurement value (1 to n times)	-	○
		<Sphere unit="D">	Spherical refractive power (D)	double	○
		<Cylinder unit="D">	Cylindrical refractive power (D)	double	○
		<Axis unit="deg">	Cylinder axis (°)	int	○
		<SE unit="D">	Spherical equivalent refraction (D)	double	△
		<CataractMode>	CAT mode	string (64 characters)	△
		<IOLMode>	IOL mode	string (64 characters)	△
		<ConfidenceIndex>*2	Confidence index	string (64 characters)	△
	<List No=" ">		Measurement value (In case of error)	-	
		<Error>*2	Error Message	string (64 characters)	△
	<Median>*3		Median values	-	
		<Sphere unit="D">	Spherical refractive power (D)	double	○
		<Cylinder unit="D">	Cylindrical refractive power (D)	double	○
		<Axis unit="deg">	Cylinder axis (°)	int	○
		<SE unit="D">	Spherical equivalent refraction (D)	double	△
<L>			Left eye measurement value	-	
	<List No=" ">		Measurement value (1 to n times)	-	○
		<Sphere unit="D">	Spherical refractive power (D)	double	○
		<Cylinder unit="D">	Cylindrical refractive power (D)	double	○
		<Axis unit="deg">	Cylinder axis (°)	int	○
		<SE unit="D">	Spherical equivalent refraction (D)	double	△
		<CataractMode>	CAT mode	string (64 characters)	△
		<IOLMode>	IOL mode	string (64 characters)	△
		<ConfidenceIndex>*2	Confidence index	string (64 characters)	△
	<List No=" ">		Measurement value (In case of error)	-	
		<Error>*2	Error Message	string (64 characters)	△
	<Median>*3		Median values	-	
		<Sphere unit="D">	Spherical refractive power (D)	double	○
		<Cylinder unit="D">	Cylindrical refractive power (D)	double	○
		<Axis unit="deg">	Cylinder axis (°)	int	○
		<SE unit="D">	Spherical equivalent refraction (D)	double	△

<PD>		Pupillary distance	–	
	<WorkingDistance unit="cm">	Viewing distance used for Near PD	int	△
	<Distance unit="mm">	PD at optical Infinity	double	○
	<Near unit="mm">	PD at working distance	double	△
Unique tag of each company can be optionally defined here.				any

*1: For data element <CylinderMode>, the terms have the following meaning:

"+" = the cylinder value is always positive

"–" = the cylinder value is always negative

"mix" = the cylindrical power by positive reading when the refractive power is positive for any meridional angle and the cylindrical power by negative reading in other cases

*2: <ConfidenceIndex> and <Error> data elements are vendor specific strings and **JOIA** does not define "coded" values for these data elements.

*3: For the scenario where multiple refractive measurements are sent AND the optional <Median> section is not sent, the EHR is strongly recommended to calculate the median from the list of measurements and store the median in its internal data base.

■Keratometer data

Tag name			Description	Data type	Necessity
<Measure type="KM">			Measurement type tag	–	○
	<DiopterStep unit="D">		Corneal refractive power increment	double	△
	<AxisStep unit="deg">		Angle increment	int	△
	<CylinderMode>*1		Cylinder mode (–, +)	string(–,+)	△
	<RefractiveIndex >		Corneal refractive index	double	○
	<KM>				
	<R>		Right eye measurement value	–	
	<List No=" ">		Measurement value (1 to n times)	–	○
		<R1>	Flat	–	○
		<Radius unit="mm">	Curvature radius	double	○
		<Power unit="D">	Corneal refractive power	double	○
		<Axis unit="deg">*2	Axis angle	int	○
		<R2>	Steep	–	○
		<Radius unit="mm">	Curvature radius	double	○
		<Power unit="D">	Corneal refractive power	double	○

				<Axis unit="deg">*2	Axis angle	int	○
			<Average>		Average of R1 and R2	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	△
			<Cylinder>		Cylinder power	–	○
				<Power unit="D">	Cylindrical refractive power	double	○
				<Axis unit="deg">	Cylinder axis angle	int	○
		<List No=" ">			Measurement value (In case of error)	–	
			<Error> *3		Error Message	string (64 characters)	△
		<Median>			Median values	–	
			<R1>		Flat	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	○
				<Axis unit="deg">*2	Axis angle	int	○
			<R2>		Steep	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	○
				<Axis unit="deg">*2	Axis angle	int	○
			<Average>		Average of R1 and R2	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	△
			<Cylinder>		Cylindrical power	–	○
				<Power unit="D">	Cylindrical refractive power	double	○
				<Axis unit="deg">	Cylinder axis angle	int	○
	<L>				Left eye measurement value	–	
		<List No=" ">			Measurement value (1 to n times)	–	○
			<R1>		Flat	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	○
				<Axis unit="deg">*2	Axis angle	int	○
			<R2>		Steep	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive power	double	○
				<Axis unit="deg">*2	Axis angle	int	○
			<Average>		Average of R1 and R2	–	○
				<Radius unit="mm">	Curvature radius	double	○
				<Power unit="D">	Corneal refractive value	double	△
			<Cylinder>		Cylinder power	–	○
				<Power unit="D">	Cylindrical	double	○

				refractive power		
			<Axis unit="deg">	Cylinder axis angle	int	○
		<List No=" ">		Measurement value (In case of error)	-	
		<Error> *3		Error Message	string (64 characters)	△
		<Median>		Median values	-	
			<R1>	Flat	-	○
			<Radius unit="mm">	Curvature radius	double	○
			<Power unit="D">	Corneal refractive power	double	○
			<Axis unit="deg">*2	Axis angle	int	○
			<R2>	Steep	-	○
			<Radius unit="mm">	Curvature radius	double	○
			<Power unit="D">	Corneal refractive power	double	○
			<Axis unit="deg">*2	Axis angle	int	○
			<Average>	Average of R1 and R2	-	○
			<Radius unit="mm">	Curvature radius	double	○
			<Power unit="D">	Corneal refractive power	double	△
			<Cylinder>	Cylinder power	-	○
			<Power unit="D">	Cylindrical refractive power	double	○
			<Axis unit="deg">	Cylinder axis angle	int	○

<Pupil>				Pupil size data	-	
	<R>			Right eye measurement value	-	
		<PupilSize unit="mm" Lamp="on","off">		Pupil size	double	△
	<L>			Left eye measurement value	-	
		<PupilSize unit="mm" Lamp="on","off">		Pupil size	double	△

<Corneal>				Corneal size data	-	
	<R>			Right eye measurement value	-	
		<CornealSize unit="mm"> *4		Corneal size	double	△
	<L>			Left eye measurement value	-	
		<CornealSize unit="mm"> *4		Corneal size	double	△

Unique tag of each company can be optionally defined here.	any

*1: For data element <CylinderMode>, the terms have the following meaning:

"+" = the cylinder value is always positive

"−" = the cylinder value is always negative

*2: The term "Axis" is used in colloquial clinical parlance. However, the proper optical term for this usage is "meridian" and represents the corneal meridian measured during Keratometry.

*3: <Error> data element is vendor specific strings and **JOIA** does not define "coded" values for these data elements.

*4: The data element <CornealSize unit="mm"> is populated by devices in a horizontal measurement direction, however, it is not specified how the measurement is accomplished. The most common use case is "from white to white", but others may exist.

■Tonometer data

Tag name	Description	Data type	Necessity
<Measure type="TM">	Measure type tag	−	○
<TM>			
<R>	Right eye measurement value	−	
<List No=" ">	Measurement value (0 to n times)	−	
<IOP_mmHg unit="mmHg">	Intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
<ConfidenceIndex>*1	Confidence index	string (64 characters)	△
<Average>	Average value	−	○
<IOP_mmHg unit="mmHg">	Intraocular pressure(mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
	↓In case of error		
<Error>*1	Error Message	string (64 characters)	△
<L>	Left eye measurement value	−	
<List No=" ">	Measurement value (0 to n times)	−	
<IOP_mmHg unit="mmHg">	Intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
<ConfidenceIndex>*1	Confidence index	string (64 characters)	△
<Average>	Average value	−	○
<IOP_mmHg unit="mmHg">	Intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
	↓In case of error		
<Error>*1	Error Message	string (64 characters)	△
<CorrectedIOP>			
<Formula1 No=" ">	Correction Formula1 (0 to n) *3	−	
<R>	Right eye data	−	
<Param1 unit="mm">	Parameter 1(mm)	double	△
<Param2>	Parameter2	double	△

<CCT unit="mm">	Central corneal thickness	double	△
<Measured>	Measurement value	–	
<IOP_mmHg unit="mmHg">	Intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
<Corrected>	Corrected value	–	○
<IOP_mmHg unit="mmHg">	Corrected intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Corrected intraocular pressure (kPa) or (hPa)	double	△
<L>	Left eye data	–	
<Param1 unit="mm">	Parameter 1(mm)	double	△
<Param2>	Parameter2	double	△
<CCT unit="mm">	Central corneal thickness	double	△
<Measured>	Measurement value	–	
<IOP_mmHg unit="mmHg">	Intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Intraocular pressure (kPa) or (hPa)	double	△
<Corrected>	Corrected value	–	○
<IOP_mmHg unit="mmHg">	Corrected intraocular pressure (mmHg)	double	○
<IOP_Pa unit="kPa">*2	Corrected intraocular pressure (kPa) or (hPa)	double	△
Unique tag of each company can be optionally defined here.			any

*1: <ConfidenceIndex> and <Error> data elements are vendor specific strings and **JOIA** does not define coded values for these data elements.

*2: Both "kPa" and "hPa" can be used for the unit of intraocular pressure (attribute of ＜IOP_Pa＞tag) listed in Pascal.

*3: Correction Formula 1 (correction formula of corrected intraocular pressure)

Following correction formula is used for calculation of the corrected intraocular pressure:

Corrected IOP value = Measurement intraocular pressure value + Intraocular pressure correction value

IOP correction value = $(\text{Param1} \times 1000 - \text{CCT} \times 1000) \times \text{Param2}$

Correction factor: Param1: Reference central corneal thickness (mm)

CCT : Central corneal thickness (mm)

Param2 : Parameter 2 correction amount adjustment factor (0.0001 to 1.0000)

■Lensmeter data

Tag name	Description	Data type	Necessity
<Measure type="LM">	Measurement type tag	–	○
<MeasureMode>*1	Measurement mode (Normal, Progressive, Contact)	string (64 characters)	△
<DiopterStep unit="D">	Diopter increment	double	△
<AxisStep unit="deg">	Cylinder axis angle increment	int	△
<CylinderMode>*2	Cylinder mode(−,+,mix)	string(−,+,mix)	△

<PrismDiopterStep unit="pri">	Prism diopter increment	double	△
<PrismBaseStep unit="deg">	Prism base increment	int	△
<PrismMode>*3	Prism mode	string(pb,xy)	△
<AddMode>*4	Additional power mode	string(add,nsph)	△
<LensLabel>	Lens Label	String (64 characters)	

<LM>				
	<S>*5	Single measurement value	-	
	<Sphere unit="D">	Spherical power (D)	double	○
	<Cylinder unit="D">	Cylindrical power (D)	double	○
	<Axis unit="deg">	Cylinder axis (°)	int	○
	<SE unit="D">	Spherical equivalent (D)	double	△
	<ADD unit="D">	Additional power(D)	double	△
	<ADD2 unit="D">	Second additional power (D)	double	△
	<NearSphere unit="D">	Near spherical power (D)	double	△
	<NearSphere2 unit="D">	Spherical power for second near portion (D)	double	△
	<Prism unit="pri">	Prism diopter (Δ)	double	△
	<PrismBase unit="deg">	Prism base angle (°)	int	△
	<PrismX unit="pri" base="out">	Horizontal prism diopter (Δ) (base=in, out)	double	△
	<PrismY unit="pri" base="up">	Vertical prism diopter (Δ) (base=up, down)	double	△
	<UVTransmittance unit="%">	UV transmittance (%)	int	△
	<ConfidenceIndex>*6	Confidence index	string (64 characters)	△
	<S>*5	Single measurement value (In case of error)		
	<Error>*6	Error Message	string (64 characters)	△
	<R>	Right eye measurement value	-	
	<Sphere unit="D">	Spherical power (D)	double	○
	<Cylinder unit="D">	Cylindrical power (D)	double	○
	<Axis unit="deg">	Cylinder axis (°)	int	○
	<SE unit="D">	Spherical equivalent (D)	double	△
	<ADD unit="D">	Additional power (D)	double	△
	<ADD2 unit="D">	Second additional power (D)	double	△
	<NearSphere unit="D">	Near spherical power (D)	double	△
	<NearSphere2 unit="D">	Spherical power for second near portion (D)	double	△
	<Prism unit="pri">	Prism diopter (Δ)	double	△
	<PrismBase unit="deg">	Prism base angle (°)	int	△
	<PrismX unit="pri" base="out">	Horizontal prism diopter (Δ) (base=in, out)	double	△
	<PrismY unit="pri" base="up">	Vertical prism diopter (Δ) (base=up, down)	double	△
	<UVTransmittance unit="%">	UV transmittance (%)	int	△
	<ConfidenceIndex>*6	Confidence Index	string (64 characters)	△
	<R>	Right eye measurement value		

		(in case of error)		
	<Error>*6	Error Message	string (64 characters)	△
<L>		Left eye measurement value	-	
	<Sphere unit="D">	Spherical power (D)	double	○
	<Cylinder unit="D">	Cylindrical power (D)	double	○
	<Axis unit="deg">	Cylinder axis (°)	int	○
	<SE unit="D">	Spherical equivalent (D)	double	△
	<ADD unit="D">	Additional power (D)	double	△
	<ADD2 unit="D">	Second additional power (D)	double	△
	<NearSphere unit="D">	Near spherical power (D)	double	△
	<NearSphere2 unit="D">	Spherical power for second near portion (D)	double	△
	<Prism unit="pri">	Prism diopter (Δ)	double	△
	<PrismBase unit="deg">	Prism base angle (°)	int	△
	<PrismX unit="pri" base="out">	Horizontal prism diopter (Δ) (base=in, out)	double	△
	<PrismY unit="pri" base="up">	Vertical prism diopter (Δ) (base=up, down)	double	△
	<UVTransmittance unit="%">	UV transmittance (%)	int	△
	<ConfidenceIndex>*6	Confidence index	string (64 characters)	△
<L>		Left eye measurement value (in case of error)		
	<Error>*6	Error Message	string (64 characters)	△

<PD>		Pupillary distance	-	
	<Distance unit="mm">	Far pupillary distance	double	△
	<DistanceR unit="mm">	Right eye far pupillary distance	double	△
	< DistanceL unit="mm">	Left eye far pupillary distance	double	△
	< Near unit="mm">	Near pupillary distance	double	△
	< NearR unit="mm">	Right eye near pupillary distance	double	△
	< NearL unit="mm">	Left eye near pupillary distance	double	△

Unique tag of each company can be optionally defined here.	any

*1: For data element < MeasureMode >, the terms have the following meaning:

"Normal" = Monofocal and Non-Progressive multi-focal

"Progressive" = Progressive

"Contact" = Contact Lens"

*2: For data element <CylinderMode>, the terms have the following meaning:

"+" = the cylinder value is always positive

"–" = the cylinder value is always negative

"mix" = the cylindrical power by positive reading when the refractive power is positive for any meridional angle and the cylindrical power by negative reading in other cases

*3: For data element < PrismMode >, the terms have the following meaning:

"pb" = polar (uses data elements <Prism unit="pri"> and <PrismBase unit="deg">)

"xy" = Cartesian (uses data elements <PrismX unit="pri" base="out"> and <PrismY unit="pri" base="up">)

*4: For data element < AddMode >, the terms have the following meaning:

"add" = add (uses data elements <ADD unit="D"> and <ADD2 unit="D">

"nsph" = near sphere (uses data elements <NearSphere unit="D"> and <NearSphere2 unit="D">)

*5: Data element <S> is used for a single measurement of a lens (i.e., not specific to the left or right eye)

*6: <ConfidenceIndex> and <Error> data elements are vendor specific strings and **JOIA** does not define coded values for these data elements.

4. Namespaces

4-1. Definition of namespace

XML namespace is defined for every data classification.

The prefix added to each data classification is as below.

Data classification	XML Namespace prefix
Common data	nsCommon
Refractometer data	nsREF
Keratometer data	nsKM
Tonometer data	nsTM
Lensmeter data	nsLM
・ ・	・ ・

5. Schema definition file

5-1. Schema file

The tag definition of each data type is described in a schema file. The schema file is prepared for each data type.

Data classification	XML Namespace prefix
Common data	Common_schema.xsd
Refractometer data	REF_schema.xsd
Keratometer data	KM_schema.xsd
Tonometer data	TM_schema.xsd
Lensmeter data	LM_schema.xsd
・ ・	・ ・

○ XML file sample of refractometer data

==========

```
<?xml version="1.0" encoding="UTF-8"?>

<?xml-stylesheet type="text/xsl" href="REF_Stylesheet.xsl" ?>

<Ophthalmology xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:nsCommon="http://www.joia.or.jp/standardized/namespaces/Common"
xmlns:nsREF="http://www.joia.or.jp/standardized/namespaces/REF"
xsi:schemaLocation="http://www.joia.or.jp/standardized/namespaces/Common Common_schema.xsd
                    http://www.joia.or.jp/standardized/namespaces/REF REF_schema.xsd">

  <nsCommon:Common>

      <nsCommon:Company>ABCD</nsCommon:Company>
      <nsCommon:ModelName>ABC-123</nsCommon:ModelName>
      <nsCommon:MachineNo>1234</nsCommon:MachineNo>
      <nsCommon:ROMVersion>1.0</nsCommon:ROMVersion>
      <nsCommon:Version>1.4</nsCommon:Version>
      <nsCommon:Date>2008-09-01</nsCommon:Date>
      <nsCommon:Time>19:36:28</nsCommon:Time>

      <nsCommon:Patient>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
           <nsCommon:FirstName>TARO</nsCommon:FirstName>
           <nsCommon:MiddleName></nsCommon:MiddleName>
           <nsCommon:LastName>TANAKA</nsCommon:LastName>
           <nsCommon:Sex>M</nsCommon:Sex>
           <nsCommon:Age>18</nsCommon:Age>
           <nsCommon:DOB>1975-08-16</nsCommon:DOB>
           <nsCommon:NameJ1>田中　太郎</nsCommon:NameJ1>
           <nsCommon:NameJ2>たなか　たろう</nsCommon:NameJ2>
     </nsCommon:Patient>

     <nsCommon:Operator>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
     </nsCommon:Operator>


  </nsCommon:Common>

  <nsREF:Measure type="REF">

      <nsREF:VD unit="mm">12.00</nsREF:VD>
      <nsREF:DiopterStep unit="D">0.25</nsREF:DiopterStep>
      <nsREF:AxisStep unit="deg">5</nsREF:AxisStep>
      <nsREF:CylinderMode>-</nsREF:CylinderMode>

      <nsREF:REF>

        <nsREF:R>
          <nsREF:List No="1">
```

```
            <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.25</nsREF:Cylinder>
            <nsREF:Axis unit="deg">180</nsREF:Axis>
            <nsREF:SE unit="D"></nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>9</nsREF:ConfidenceIndex>
    </nsREF:List>
    <nsREF:List No="2">
            <nsREF:Error></nsREF:Error>
    </nsREF:List>
    <nsREF:List No="3">
            <nsREF:Sphere unit="D">-0.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
            <nsREF:Axis unit="deg">90</nsREF:Axis>
            <nsREF:SE unit="D">-2.75</nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>5</nsREF:ConfidenceIndex>
    </nsREF:List>
  </nsREF:R>
  <nsREF:L>
    <nsREF:List No="1">
            <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
            <nsREF:Axis unit="deg">180</nsREF:Axis>
            <nsREF:SE unit="D">-2.75</nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>9</nsREF:ConfidenceIndex>
    </nsREF:List>
    <nsREF:List No="2">
            <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
            <nsREF:Axis unit="deg">180</nsREF:Axis>
            <nsREF:SE unit="D">-2.75</nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>9</nsREF:ConfidenceIndex>
    </nsREF:List>
    <nsREF:List No="3">
            <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
            <nsREF:Axis unit="deg">180</nsREF:Axis>
            <nsREF:SE unit="D">-2.75</nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>9</nsREF:ConfidenceIndex>
    </nsREF:List>
    <nsREF:List No="4">
            <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
            <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
            <nsREF:Axis unit="deg">180</nsREF:Axis>
            <nsREF:SE unit="D">-2.75</nsREF:SE>
            <nsREF:CataractMode>on</nsREF:CataractMode>
            <nsREF:IOLMode>on</nsREF:IOLMode>
            <nsREF:ConfidenceIndex>E</nsREF:ConfidenceIndex>
```

```
            </nsREF:List>
            <nsREF:List No="5">
                    <nsREF:Sphere unit="D">-0.50</nsREF:Sphere>
                    <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
                    <nsREF:Axis unit="deg">90</nsREF:Axis>
                    <nsREF:SE unit="D">-2.75</nsREF:SE>
                    <nsREF:CataractMode>on</nsREF:CataractMode>
                    <nsREF:IOLMode>on</nsREF:IOLMode>
                    <nsREF:ConfidenceIndex>5</nsREF:ConfidenceIndex>
            </nsREF:List>
            <nsREF:List No="6">
                    <nsREF:Sphere unit="D">+0.50</nsREF:Sphere>
                    <nsREF:Cylinder unit="D">1.50</nsREF:Cylinder>
                    <nsREF:Axis unit="deg">180</nsREF:Axis>
                    <nsREF:SE unit="D">-2.75</nsREF:SE>
                    <nsREF:CataractMode>on</nsREF:CataractMode>
                    <nsREF:IOLMode>on</nsREF:IOLMode>
                    <nsREF:ConfidenceIndex>6</nsREF:ConfidenceIndex>
            </nsREF:List>
            <nsREF:Median>
                    <nsREF:Sphere unit="D">-2.50</nsREF:Sphere>
                    <nsREF:Cylinder unit="D">0.50</nsREF:Cylinder>
                    <nsREF:Axis unit="deg">180</nsREF:Axis>
                    <nsREF:SE unit="D">-2.75</nsREF:SE>
            </nsREF:Median>
          </nsREF:L>

        </nsREF:REF>

        <nsREF:PD>
              <nsREF:WorkingDistance unit="cm">40</nsREF:WorkingDistance>
              <nsREF:Distance unit="mm">62.5</nsREF:Distance>
              <nsREF:Near unit="mm">60.5</nsREF:Near>
        </nsREF:PD>

        <(Unique tag)>
                .
                .
                .
        </(Unique tag)>

    </nsREF:Measure>

</Ophthalmology>
```

Unique tag of each company is specified here. Prefix is not necessary because it is out of the namespace definition.

○ XML file sample of keratometer data

```
==========================================================================
<?xml version="1.0" encoding="UTF-8"?>

<?xml-stylesheet type="text/xsl" href="KM_Stylesheet.xsl" ?>

<Ophthalmology xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:nsCommon="http://www.joia.or.jp/standardized/namespaces/Common"
xmlns:nsREF="http://www.joia.or.jp/standardized/namespaces/KM"
xsi:schemaLocation="http://www.joia.or.jp/standardized/namespaces/Common Common_schema.xsd
                    http://www.joia.or.jp/standardized/namespaces/KM KM_schema.xsd">

  <nsCommon:Common>

      <nsCommon:Company>ABCD</nsCommon:Company>
      <nsCommon:ModelName>ABC-123</nsCommon:ModelName>
      <nsCommon:MachineNo>1234</nsCommon:MachineNo>
      <nsCommon:ROMVersion>1.0</nsCommon:ROMVersion>
      <nsCommon:Version>1.4</nsCommon:Version>
      <nsCommon:Date>2008-09-01</nsCommon:Date>
      <nsCommon:Time>19:36:28</nsCommon:Time>

      <nsCommon:Patient>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
           <nsCommon:FirstName>TARO</nsCommon:FirstName>
           <nsCommon:MiddleName></nsCommon:MiddleName>
           <nsCommon:LastName>TANAKA</nsCommon:LastName>
           <nsCommon:Sex>M</nsCommon:Sex>
           <nsCommon:Age>18</nsCommon:Age>
           <nsCommon:DOB>1975-08-16</nsCommon:DOB>
           <nsCommon:NameJ1>田中　太郎</nsCommon:NameJ1>
           <nsCommon:NameJ2>たなか　たろう</nsCommon:NameJ2>
     </nsCommon:Patient>

     <nsCommon:Operator>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
     </nsCommon:Operator>

  </nsCommon:Common>

  <nsKM:Measure type="KM">

      <nsKM:DiopterStep unit="D">0.25</nsKM:DiopterStep>
      <nsKM:AxisStep unit="deg">5</nsKM:AxisStep>
      <nsKM:CylinderMode>-</nsKM:CylinderMode>
      <nsKM:RefractiveIndex>1.3375</nsKM:RefractiveIndex>

      <nsKM:KM>
        <nsKM:R>
          <nsKM:List No="1">
                  <nsKM:R1>
                        <nsKM:Radius unit="mm">8.05</nsKM:Radius>
```

```
                <nsKM:Power unit="D">45.00</nsKM:Power>
                <nsKM:Axis unit="deg">180</nsKM:Axis>
            </nsKM:R1>
            <nsKM:R2>
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">44.95</nsKM:Power>
                <nsKM:Axis unit="deg">68</nsKM:Axis>
            </nsKM:R2>
            <nsKM:Average>
                <nsKM:Radius unit="mm">7.85</nsKM:Radius>
                <nsKM:Power unit="D">43.35</nsKM:Power>
            </nsKM:Average>
            <nsKM:Cylinder>
                <nsKM:Power unit="D">-2.50</nsKM:Power>
                <nsKM:Axis unit="deg">150</nsKM:Axis>
            </nsKM:Cylinder>
        </nsKM:List>
        <nsKM:List No="2">
            <nsKM:Error></nsKM:Error>
        </nsKM:List>
        <nsKM:List No="3">
            <nsKM:R1>
                <nsKM:Radius unit="mm">8.05</nsKM:Radius>
                <nsKM:Power unit="D">45.00</nsKM:Power>
                <nsKM:Axis unit="deg">180</nsKM:Axis>
            </nsKM:R1>
            <nsKM:R2>
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">44.95</nsKM:Power>
                <nsKM:Axis unit="deg">68</nsKM:Axis>
            </nsKM:R2>
            <nsKM:Average>
                <nsKM:Radius unit="mm">7.85</nsKM:Radius>
                <nsKM:Power unit="D">43.35</nsKM:Power>
            </nsKM:Average>
            <nsKM:Cylinder>
                <nsKM:Power unit="D">-2.50</nsKM:Power>
                <nsKM:Axis unit="deg">150</nsKM:Axis>
            </nsKM:Cylinder>
        </nsKM:List>
    </nsKM:R>
    <nsKM:L>
        <nsKM:List No="1">
            <nsKM:R1>
                <nsKM:Radius unit="mm">8.04</nsKM:Radius>
                <nsKM:Power unit="D">42.00</nsKM:Power>
                <nsKM:Axis unit="deg">133</nsKM:Axis>
            </nsKM:R1>
            <nsKM:R2>
                <nsKM:Radius unit="mm">7.54</nsKM:Radius>
                <nsKM:Power unit="D">44.75</nsKM:Power>
                <nsKM:Axis unit="deg">43</nsKM:Axis>
            </nsKM:R2>
            <nsKM:Average>
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">43.25</nsKM:Power>
            </nsKM:Average>
```

```
        <nsKM:Cylinder>
              <nsKM:Power unit="D">-2.75</nsKM:Power>
              <nsKM:Axis unit="deg">133</nsKM:Axis>
        </nsKM:Cylinder>
</nsKM:List>
<nsKM:List No="2">
        <nsKM:R1>
              <nsKM:Radius unit="mm">8.04</nsKM:Radius>
              <nsKM:Power unit="D">42.00</nsKM:Power>
              <nsKM:Axis unit="deg">133</nsKM:Axis>
        </nsKM:R1>
        <nsKM:R2>
              <nsKM:Radius unit="mm">7.54</nsKM:Radius>
              <nsKM:Power unit="D">44.75</nsKM:Power>
              <nsKM:Axis unit="deg">43</nsKM:Axis>
        </nsKM:R2>
        <nsKM:Average>
              <nsKM:Radius unit="mm">7.65</nsKM:Radius>
              <nsKM:Power unit="D">43.25</nsKM:Power>
        </nsKM:Average>
        <nsKM:Cylinder>
              <nsKM:Power unit="D">-2.75</nsKM:Power>
              <nsKM:Axis unit="deg">133</nsKM:Axis>
        </nsKM:Cylinder>
</nsKM:List>
<nsKM:List No="3">
        <nsKM:R1>
              <nsKM:Radius unit="mm">7.85</nsKM:Radius>
              <nsKM:Power unit="D">43.75</nsKM:Power>
              <nsKM:Axis unit="deg">180</nsKM:Axis>
        </nsKM:R1>
        <nsKM:R2>
              <nsKM:Radius unit="mm">8.25</nsKM:Radius>
              <nsKM:Power unit="D">44.80</nsKM:Power>
              <nsKM:Axis unit="deg">90</nsKM:Axis>
        </nsKM:R2>
        <nsKM:Average>
              <nsKM:Radius unit="mm">7.65</nsKM:Radius>
              <nsKM:Power unit="D">43.50</nsKM:Power>
        </nsKM:Average>
        <nsKM:Cylinder>
              <nsKM:Power unit="D">+2.25</nsKM:Power>
              <nsKM:Axis unit="deg">133</nsKM:Axis>
        </nsKM:Cylinder>
</nsKM:List>
<nsKM:List No="4">
        <nsKM:R1>
              <nsKM:Radius unit="mm">8.50</nsKM:Radius>
              <nsKM:Power unit="D">42.00</nsKM:Power>
              <nsKM:Axis unit="deg">133</nsKM:Axis>
        </nsKM:R1>
        <nsKM:R2>
              <nsKM:Radius unit="mm">8.54</nsKM:Radius>
              <nsKM:Power unit="D">42.35</nsKM:Power>
              <nsKM:Axis unit="deg">180</nsKM:Axis>
        </nsKM:R2>
        <nsKM:Average>
```

```
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">43.25</nsKM:Power>
            </nsKM:Average>
            <nsKM:Cylinder>
                <nsKM:Power unit="D">-0.25</nsKM:Power>
                <nsKM:Axis unit="deg">133</nsKM:Axis>
            </nsKM:Cylinder>
        </nsKM:List>
        <nsKM:List No="5">
            <nsKM:R1>
                <nsKM:Radius unit="mm">8.04</nsKM:Radius>
                <nsKM:Power unit="D">42.00</nsKM:Power>
                <nsKM:Axis unit="deg">133</nsKM:Axis>
            </nsKM:R1>
            <nsKM:R2>
                <nsKM:Radius unit="mm">7.54</nsKM:Radius>
                <nsKM:Power unit="D">44.75</nsKM:Power>
                <nsKM:Axis unit="deg">43</nsKM:Axis>
            </nsKM:R2>
            <nsKM:Average>
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">43.25</nsKM:Power>
            </nsKM:Average>
            <nsKM:Cylinder>
                <nsKM:Power unit="D">-2.75</nsKM:Power>
                <nsKM:Axis unit="deg">133</nsKM:Axis>
            </nsKM:Cylinder>
        </nsKM:List>
        <nsKM:Median>
            <nsKM:R1>
                <nsKM:Radius unit="mm">7.25</nsKM:Radius>
                <nsKM:Power unit="D">42.50</nsKM:Power>
                <nsKM:Axis unit="deg">180</nsKM:Axis>
            </nsKM:R1>
            <nsKM:R2>
                <nsKM:Radius unit="mm">7.54</nsKM:Radius>
                <nsKM:Power unit="D">44.75</nsKM:Power>
                <nsKM:Axis unit="deg">43</nsKM:Axis>
            </nsKM:R2>
            <nsKM:Average>
                <nsKM:Radius unit="mm">7.65</nsKM:Radius>
                <nsKM:Power unit="D">43.25</nsKM:Power>
            </nsKM:Average>
            <nsKM:Cylinder>
                <nsKM:Power unit="D">-2.75</nsKM:Power>
                <nsKM:Axis unit="deg">133</nsKM:Axis>
            </nsKM:Cylinder>
        </nsKM:Median>
      </nsKM:L>
    </nsKM:KM>

    <nsKM:Pupil>
        <nsKM:R>
          <nsKM:PupilSize unit="mm" Lamp="on">3.5</nsKM:PupilSize>
        </nsKM:R>
        <nsKM:L>
          <nsKM:PupilSize unit="mm" Lamp="on">3.0</nsKM:PupilSize>
```

```
        </nsKM:L>
    </nsKM:Pupil>

    <nsKM:Corneal>
        <nsKM:R>
          <nsKM:CornealSize unit="mm">2.5</nsKM:CornealSize>
        </nsKM:R>
        <nsKM:L>
          <nsKM:CornealSize unit="mm">2.0</nsKM:CornealSize>
        </nsKM:L>
    </nsKM:Corneal>

    <(Unique tag)>
            .
            .
            .
    </(Unique tag)>
```

Unique tag of each company is specified here. Prefix is not necessary because it is out of the namespace definition.

```
  </nsKM:Measure>

</Ophthalmology>
```

○ XML file sample of tonometer data

```
==========================================================================
<?xml version="1.0" encoding="UTF-8"?>

<?xml-stylesheet type="text/xsl" href="TM_Stylesheet.xsl" ?>

<Ophthalmology xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:nsCommon="http://www.joia.or.jp/standardized/namespaces/Common"
xmlns:nsTM="http://www.joia.or.jp/standardized/namespaces/TM"
xsi:schemaLocation="http://www.joia.or.jp/standardized/namespaces/Common Common_schema.xsd
                    http://www.joia.or.jp/standardized/namespaces/TM TM_schema.xsd ">

  <nsCommon:Common>

      <nsCommon:Company>ABCD</nsCommon:Company>
      <nsCommon:ModelName>ABC-123</nsCommon:ModelName>
      <nsCommon:MachineNo>1234</nsCommon:MachineNo>
      <nsCommon:ROMVersion>1.0</nsCommon:ROMVersion>
      <nsCommon:Version>1.4</nsCommon:Version>
      <nsCommon:Date>2008-09-01</nsCommon:Date>
      <nsCommon:Time>19:36:28</nsCommon:Time>

      <nsCommon:Patient>
          <nsCommon:No.>123456</nsCommon:No.>
          <nsCommon:ID>ABCDEFG</nsCommon:ID>
           <nsCommon:FirstName>TARO</nsCommon:FirstName>
           <nsCommon:MiddleName></nsCommon:MiddleName>
           <nsCommon:LastName>TANAKA</nsCommon:LastName>
           <nsCommon:Sex>M</nsCommon:Sex>
           <nsCommon:Age>18</nsCommon:Age>
           <nsCommon:DOB>1975-08-16</nsCommon:DOB>
           <nsCommon:NameJ1>田中　太郎</nsCommon:NameJ1>
           <nsCommon:NameJ2>たなか　たろう</nsCommon:NameJ2>
     </nsCommon:Patient>

     <nsCommon:Operator>
          <nsCommon:No.>123456</nsCommon:No.>
          <nsCommon:ID>ABCDEFG</nsCommon:ID>
     </nsCommon:Operator>

  </nsCommon:Common>

  <nsTM:Measure type="TM">

      <nsTM:TM>
          <nsTM:R>
              <nsTM:List No="1">
                  <nsTM:IOP_mmHg unit="mmHg">24.0</nsTM:IOP_mmHg>
                  <nsTM:IOP_Pa unit="kPa">3.2</nsTM:IOP_Pa>
                  <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
              </nsTM:List>
              <nsTM:List No="2">
                  <nsTM:IOP_mmHg unit="mmHg">21.0</nsTM:IOP_mmHg>
```

```
            <nsTM:IOP_Pa unit="kPa">2.8</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="3">
            <nsTM:IOP_mmHg unit="mmHg">22.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.9</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:Average>
            <nsTM:IOP_mmHg unit="mmHg">22.3</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.97</nsTM:IOP_Pa>
        </nsTM:Average>
    </nsTM:R>
    <nsTM:L>
        <nsTM:List No="1">
            <nsTM:IOP_mmHg unit="mmHg">24.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">3.2</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="2">
            <nsTM:IOP_mmHg unit="mmHg">21.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.8</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="3">
            <nsTM:IOP_mmHg unit="mmHg">22.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.9</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="4">
            <nsTM:IOP_mmHg unit="mmHg">24.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">3.2</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="5">
            <nsTM:IOP_mmHg unit="mmHg">21.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.8</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="6">
            <nsTM:IOP_mmHg unit="mmHg">22.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.9</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="7">
            <nsTM:IOP_mmHg unit="mmHg">24.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">3.2</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex></nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="8">
            <nsTM:IOP_mmHg unit="mmHg">21.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.8</nsTM:IOP_Pa>
            <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
        </nsTM:List>
        <nsTM:List No="9">
            <nsTM:IOP_mmHg unit="mmHg">22.0</nsTM:IOP_mmHg>
            <nsTM:IOP_Pa unit="kPa">2.9</nsTM:IOP_Pa>
```

```
                <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
            </nsTM:List>
            <nsTM:List No="10">
                <nsTM:IOP_mmHg unit="mmHg">24.0</nsTM:IOP_mmHg>
                <nsTM:IOP_Pa unit="kPa">3.2</nsTM:IOP_Pa>
                <nsTM:ConfidenceIndex>*</nsTM:ConfidenceIndex>
            </nsTM:List>
            <nsTM:Average>
                <nsTM:IOP_mmHg unit="mmHg">22.5</nsTM:IOP_mmHg>
                <nsTM:IOP_Pa unit="kPa">2.99</nsTM:IOP_Pa>
            </nsTM:Average>
        </nsTM:L>
    </nsTM:TM>

    <nsTM:CorrectedIOP>
        <nsTM:Formula1 No="1">
            <nsTM:R>
                <nsTM:Param1 unit="mm">0.554</nsTM:Param1>
                <nsTM:Param2>0.0450</nsTM:Param2>
                <nsTM:CCT unit="mm">0.588</nsTM:CCT>
                <nsTM:Measured>
                    <nsTM:IOP_mmHg unit="mmHg">22.3</nsTM:IOP_mmHg>
                    <nsTM:IOP_Pa unit="kPa">2.97</nsTM:IOP_Pa>
                </nsTM:Measured>
                <nsTM:Corrected>
                    <nsTM:IOP_mmHg unit="mmHg">20.8</nsTM:IOP_mmHg>
                    <nsTM:IOP_Pa unit="kPa">2.77</nsTM:IOP_Pa>
                </nsTM:Corrected>
            </nsTM:R>
            <nsTM:L>
                <nsTM:Param1 unit="mm">0.554</nsTM:Param1>
                <nsTM:Param2>0.0450</nsTM:Param2>
                <nsTM:CCT unit="mm">0.588</nsTM:CCT>
                <nsTM:Measured>
                    <nsTM:IOP_mmHg unit="mmHg">22.5</nsTM:IOP_mmHg>
                    <nsTM:IOP_Pa unit="kPa">2.99</nsTM:IOP_Pa>
                </nsTM:Measured>
                <nsTM:Corrected>
                    <nsTM:IOP_mmHg unit="mmHg">21.0</nsTM:IOP_mmHg>
                    <nsTM:IOP_Pa unit="kPa">2.76</nsTM:IOP_Pa>
                </nsTM:Corrected>
            </nsTM:L>
        </nsTM:Formula1>
    </nsTM:CorrectedIOP>


    <(Unique tag)>
            .
            .
            .
    </(Unique tag)>
```

Unique tag of each company is specified here. Prefix is not necessary because it is out of the namespace definition.

```
  </nsTM:Measure>

</Ophthalmology>
```

○ XML file sample of lensmeter data

```
==========================================================================
<?xml version="1.0" encoding="UTF-16"?>

<?xml-stylesheet type="text/xsl" href="LM_Stylesheet.xsl" ?>

<Ophthalmology xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:nsCommon="http://www.joia.or.jp/standardized/namespaces/Common"
xmlns:nsLM="http://www.joia.or.jp/standardized/namespaces/LM"
xsi:schemaLocation="http://www.joia.or.jp/standardized/namespaces/Common Common_schema.xsd
                    http://www.joia.or.jp/standardized/namespaces/LM LM_schema.xsd">

  <nsCommon:Common>

      <nsCommon:Company>ABCD</nsCommon:Company>
      <nsCommon:ModelName>ABC-123</nsCommon:ModelName>
      <nsCommon:MachineNo>1234</nsCommon:MachineNo>
      <nsCommon:ROMVersion>1.0</nsCommon:ROMVersion>
      <nsCommon:Version>1.4</nsCommon:Version>
      <nsCommon:Date>2008-09-01</nsCommon:Date>
      <nsCommon:Time>19:36:28</nsCommon:Time>

      <nsCommon:Patient>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
           <nsCommon:FirstName>TARO</nsCommon:FirstName>
           <nsCommon:MiddleName></nsCommon:MiddleName>
           <nsCommon:LastName>TANAKA</nsCommon:LastName>
           <nsCommon:Sex>M</nsCommon:Sex>
           <nsCommon:Age>18</nsCommon:Age>
           <nsCommon:DOB>1975-08-16</nsCommon:DOB>
           <nsCommon:NameJ1>田中　太郎</nsCommon:NameJ1>
           <nsCommon:NameJ2>たなか　たろう</nsCommon:NameJ2>
     </nsCommon:Patient>

     <nsCommon:Operator>
           <nsCommon:No.>123456</nsCommon:No.>
           <nsCommon:ID>ABCDEFG</nsCommon:ID>
     </nsCommon:Operator>


  </nsCommon:Common>


  <nsLM:Measure type="LM">

      <nsLM:MeasureMode>Progressive</nsLM:MeasureMode>
      <nsLM:DiopterStep unit="D">0.25</nsLM:DiopterStep>
      <nsLM:AxisStep unit="deg">1</nsLM:AxisStep>
      <nsLM:CylinderMode>-</nsLM:CylinderMode>
      <nsLM:PrismDiopterStep unit="pri">0.25</nsLM:PrismDiopterStep>
      <nsLM:PrismBaseStep unit="deg">1</nsLM:PrismBaseStep>
```

```
<nsLM:PrismMode>xy</nsLM:PrismMode>
<nsLM:AddMode>add</nsLM:AddMode>

<nsLM:LM>
  <nsLM:S>
     <nsLM:Sphere unit="D">-3.00</nsLM:Sphere>
     <nsLM:Cylinder unit="D">-11.00</nsLM:Cylinder>
     <nsLM:Axis unit="deg">180</nsLM:Axis>
     <nsLM:SE unit="D">-8.50</nsLM:SE>
     <nsLM:ADD unit="D">1.50</nsLM:ADD>
     <nsLM:ADD2 unit="D">2.00</nsLM:ADD2>
     <nsLM:NearSphere unit="D">-1.50</nsLM:NearSphere>
     <nsLM:NearSphere2 unit="D">-1.00</nsLM:NearSphere2>
     <nsLM:Prism unit="pri">0.25</nsLM:Prism>
     <nsLM:PrismBase unit="deg">102</nsLM:PrismBase>
     <nsLM:PrismX unit="pri" base="in">0.00</nsLM:PrismX>
     <nsLM:PrismY unit="pri" base="up">0.25</nsLM:PrismY>
     <nsLM:UVTransmittance unit="%">5</nsLM:UVTransmittance>
     <nsLM:ConfidenceIndex>CYL OVERFLOW</nsLM:ConfidenceIndex>
  </nsLM:S>
  <nsLM:R>
     <nsLM:Sphere unit="D">-3.00</nsLM:Sphere>
     <nsLM:Cylinder unit="D">0.00</nsLM:Cylinder>
     <nsLM:Axis unit="deg">0</nsLM:Axis>
     <nsLM:SE unit="D">-3.00</nsLM:SE>
     <nsLM:ADD unit="D">1.50</nsLM:ADD>
     <nsLM:ADD2 unit="D">2.00</nsLM:ADD2>
     <nsLM:NearSphere unit="D">-1.50</nsLM:NearSphere>
     <nsLM:NearSphere2 unit="D">-1.00</nsLM:NearSphere2>
     <nsLM:Prism unit="pri">0.25</nsLM:Prism>
     <nsLM:PrismBase unit="deg">102</nsLM:PrismBase>
     <nsLM:PrismX unit="pri" base="in">0.00</nsLM:PrismX>
     <nsLM:PrismY unit="pri" base="up">0.25</nsLM:PrismY>
     <nsLM:UVTransmittance unit="%">5</nsLM:UVTransmittance>
     <nsLM:ConfidenceIndex></nsLM:ConfidenceIndex>
  </nsLM:R>
  <nsLM:L>
     <nsLM:Sphere unit="D">-2.00</nsLM:Sphere>
     <nsLM:Cylinder unit="D">-1.00</nsLM:Cylinder>
     <nsLM:Axis unit="deg">176</nsLM:Axis>
     <nsLM:SE unit="D">-2.50</nsLM:SE>
     <nsLM:ADD unit="D">1.75</nsLM:ADD>
     <nsLM:ADD2 unit="D">2.00</nsLM:ADD2>
     <nsLM:NearSphere unit="D">-0.25</nsLM:NearSphere>
     <nsLM:NearSphere2 unit="D">0.00</nsLM:NearSphere2>
     <nsLM:Prism unit="pri">2.50</nsLM:Prism>
     <nsLM:PrismBase unit="deg">90</nsLM:PrismBase>
     <nsLM:PrismX unit="pri" base="out">0.00</nsLM:PrismX>
     <nsLM:PrismY unit="pri" base="up">2.50</nsLM:PrismY>
     <nsLM:UVTransmittance unit="%">5</nsLM:UVTransmittance>
     <nsLM:ConfidenceIndex></nsLM:ConfidenceIndex>
  </nsLM:L>
</nsLM:LM>



<nsLM:PD>
```

```
      <nsLM:Distance unit="mm">58.5</nsLM:Distance>
      <nsLM:DistanceR unit="mm">29.5</nsLM:DistanceR>
      <nsLM:DistanceL unit="mm">29.0</nsLM:DistanceL>
      <nsLM:Near unit="mm"></nsLM:Near>
      <nsLM:NearR unit="mm"></nsLM:NearR>
      <nsLM:NearL unit="mm"></nsLM:NearL>
    </nsLM:PD>

    <(Unique tag)>
            .
            .
            .
    </(Unique tag)>

  </nsLM:Measure>

</Ophthalmology>
```

Unique tag of each company is specified here. Prefix is not necessary because it is out of the namespace definition.

Revision history

Date	Version	Content / Reason
October 21, 2008	JOIA・STD 001-1.0-2009	Establishment
August 28, 2009	JOIA・STD 001-1.1-2009	Revision/ ・Addition of △ to the explanation in the necessity field of the tag definition. ・Addition of <REF> tag to the refractometer data of the tag definition. ・Addition of <KM> tag to the keratometer data of the tag definition. ・Addition of <RefractiveIndex> and <Corneal> tags to the keratometer data of the tag definition. ・Change of definition position of optional tags. ・Addition of explanation paragraph of the namespace. ・Change of XML file samples to the samples using namespaces. ・Change of XML file samples to the samples using optional tags.
March 12, 2010	JOIA・STD 001-1.2-2010	Revision/ ・Addition of description of tonometer data.
December 7, 2010	JOIA・STD 001-1.3-2010	Revision/ ・ Deletion of the notice of patient's name in other languages. ・ Addition of character code specification. ・ Correction of mistake of name tag. ・ Corrected to no patient number is required. ・ Clarification of method of describing sex ・ Correction of sample according to the above
October 17, 2012	JOIA・STD 001-1.4-2012	Revision/ ・ Addition of UTF-16 to the character code specification. ・ Addition of the lens meter tag definition.
July 10, 2016	JOIA Std.001-1.5-2016	Revision/ ・Change in 1-1. Handling of files description ・Addition of <PatientIDSource> data element and its description to Common data. ・Addition of the following items to REF data. ・< CycloplegicMode > data element. ・<CylinderMode> data element description. ・<ConfidenceIndex> and <Error> data elements description. ・<Median> data element description. ・Change in <PD> data element description in REF data. ・Addition of the following items to KM data. ・<CylinderMode> data element description. ・Flat,Steep Description in <R1>,<R2>.

		・<Axis unit="deg"> data element description. ・<Error> data elements description. ・Lamp off statement in <CornealSize> data element. ・<CornealSize unit="mm"> data element description. ・Change in <Average> data element description in KM data. ・Deletion of “mix” at <CylinderMode> in KM data. ・Addition of the following items to NT data. ・<ConfidenceIndex> and <Error> data elements description. ・<Corrected IOP> data element description. **・Change in <PrismDiopterStep> data element in LMdata.** ・Addition of the following items to LM data. ・<LensLabel> data element. ・<MeasurementMode> data element description. ・<CylinderMode> data element description. ・<PrismMode> data element description. ・<ADDMode> data element description. ・<S> data element description. ・<ConfidenceIndex> and <Error> data elements description **・Addition of xml-stylesheet type in XML file sample of refractometer data, keratometer data and lensmeter data**