

# **IEEE 11073 Nomenclature Status**

**HL7 and IEEE 11073 Virtual F2F**

**January 18, 2022**

(updated January 25, 2022)

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# IEEE P11073-10101b “provisional” term groups

- Group1:** *750+ events and alerts covering devices used in the ICU, CCU, OR and ER as well as NMT, rSO2 and other parameters.*
- Group2:** *IHE PCD infusion pump observations, settings, and events and alerts and MEM-DMC terms. Draft pump containment model has been completed by Brian Witkowski and colleagues.*
- Group3:** *Hemodialysis (numeric observations, settings, events and alerts, and containment model) that support the Dialysis Machine Data Standard project.*
- Group4, 5:** *Additional terms for Getinge/Maquet Ventilator and Anesthesia (observations, settings, events and alerts, and containment model).*
- Group7:** *Terms required for the BPKP (Base Participant Key Purpose) vocabulary for the IEEE P11073-10700 SDC ballot, plus other terms.*
- Group6:** *Mapping for Dräger, Getinge and GE ventilator modes to ISO 19223 ventilator mode nomenclature and syntax and to IEEE 11073 REFIDs and numeric codes.*

The zip files for the two sets of terms (Groups 1-3 and 4-7) have been posted on the IEEE-SA iMeet Central site at <https://ieee-sa.imeetcentral.com/11073-nomenclature/>. Terms have UoM and Enum\_Value co-constraints.

# IEEE P11073-10101b – remaining new content

**GroupZ** – *last-minute vendor requests for individual terms*

- *additional IHE PCD infusion pump terms (13 new + enums)*  
*(active review; waiting for final set of enumerations and their descriptions)*
- *additional terms for dialysis orders (11 new)*  
*(final review)*
- *additional completed ventilation mappings to ISO 19223*  
*(mapping performed by vendor and reviewed by ISO 19223 leadership and others)*

**Systematic Names** (SysNames)

- *750 events + 170 dialysis completed, ~ 130 SysNames to go!*
- *MDC\_EVT SysNames required additional consideration ...*

# Systematic Names for events and alerts (1/2)

*Constructing Systematic Names for MDC\_EVT event and alert identifiers can be challenging:*

- 1. There are a large number of events and alerts, reflecting vendor variation in design and design philosophy.*
- 2. Certain use-cases and applications may require finer semantic granularity for direct communication between two PoCD devices and less granularity for other applications.*
- 3. In practice, the Systematic Name provides two locations for describing the alert <source>, in addition to the mandatory <src> identifier of the <src-evt> pair. Ensuring that these are all consistent is non-trivial.*

*To facilitate the creation of more consistent Systematic Names for 10101b event and alert identifiers, **natural language order** was imposed wherever possible on the comma-separated fields of the first descriptor of the Systematic Name and the principal **ConditionStateAction** of the event was explicitly identified.*

# Systematic Names for events and alerts (2/2)

To facilitate the creation of more consistent Systematic Names for 10101b event and alert identifiers, **natural language order** was imposed wherever possible on the comma-separated fields of the first descriptor of the SysName and the principal **ConditionStateAction** for the event was identified:

Subject (source) ,..., **ConditionStateAction** ,..., {optional qualifiers} ,..., {optional recommendations}

For example:

“The blower temperature is **excessively high**; checking required”

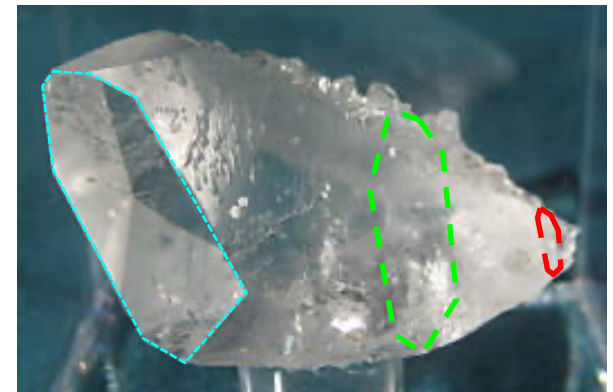
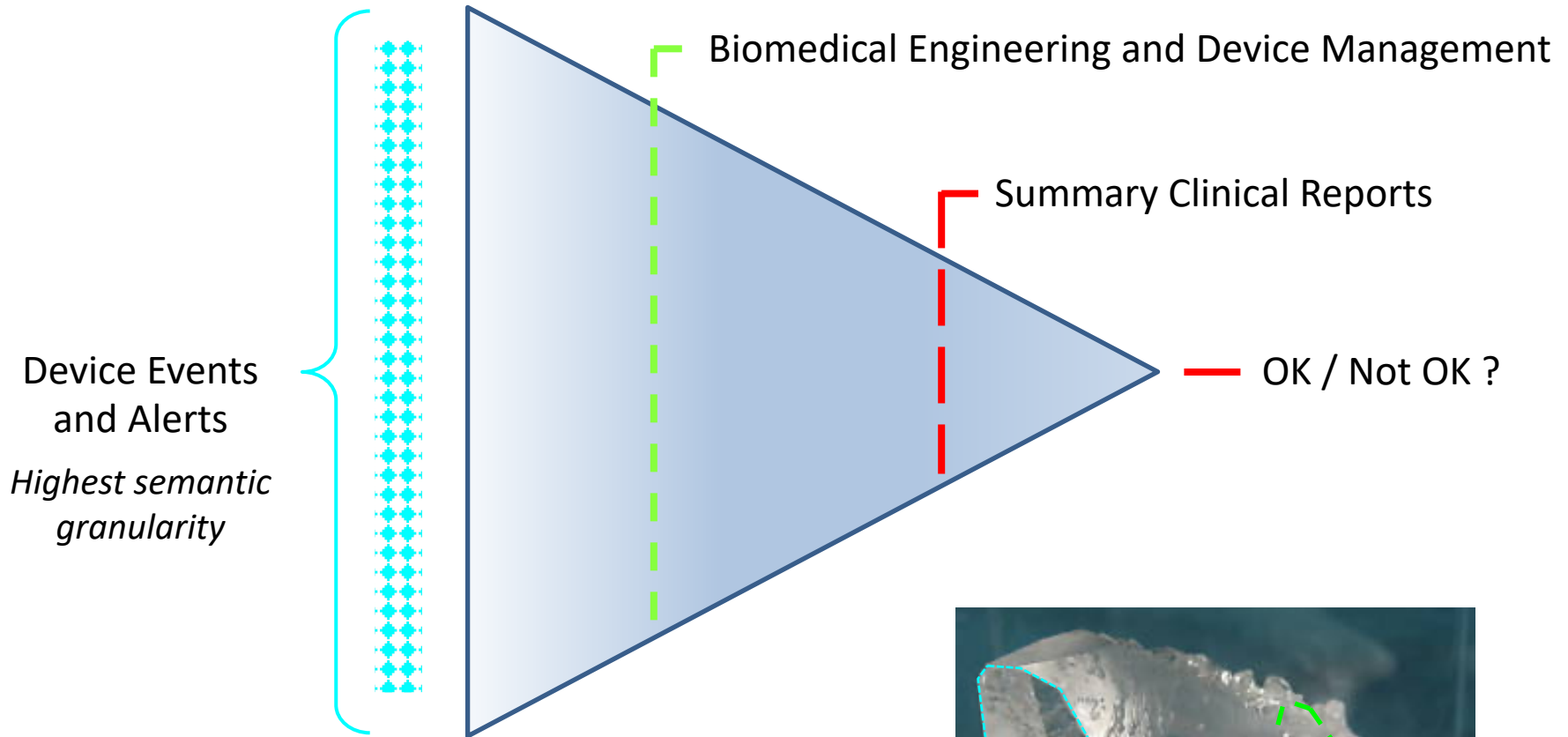
would have the following Systematic Name:

Systematic Name			
<i>Base Concept</i>	<i>First Descriptor</i>	<i>Second Descriptor</i>	<i>Third Descriptor</i>
ErrorEvent	Blower, temperature, <b>excessively high</b> , CheckingRequired	FunctionalDisturbance	Device, Ventilator

The bold font highlighting of the comma-separated **Condition/State/Action** field «**excessively high**» of the first descriptor is triggered by the presence of certain key words and phrases plus a small number of additional rules.

Any comma-separated fields to the left of the **Condition/State/Action** field are **detailed source identifiers** and are considered together with any **general device identifiers** «Device, Ventilator» specified by the third descriptor. The **source** information specified by the Systematic Name must be consistent with the formal <src> REFID identifier(s) permitted by the <src-evt> source-event identifier pair for each <evt> REFID identifier.

# Event and Alert Mapping



# Hemodialysis

## Dialysis Machine Data Standard

### *Contributions by market leaders in hemodialysis products and services*

- **HL7 V2 Implementation Guide**, based on IHE PCD DEC and ACM and IEEE 11073 nomenclature.
- Complete **containment model** and **co-constraints**.
- Terms at "provisional" status for IEEE P11073-10101b.
- ***Defer Dialysis Rx Order terms until after 10101b.***

Vendor	Devices	EMR/EHR	Service
Fresenius and NxStage	✓	✓	
Baxter	✓		
BBraun	✓		
Medtronic	✓		
Outset Medical	✓	d2c	
QUANTA Dialysis Technologies	✓		
Gaia Software		✓	
Epic		✓	
DaVita			✓
Fresenius Medical Care			✓
Dialysis Clinic, Inc.			✓

- More vendors have joined!
- Dialysis Rx Order terms require further clinician review; will defer until after 10101b. *(11+ terms) Continue reviewing proposed use of IHE PDQ (ITI-21) and HL7 Query by Parameter with a Segment Pattern Response (QBP/RSP). (updated slide on January 25, 2022)*
- Containment model with co-constraints, cardinality and assertion statements.
- Can validate HL7 V2 messages as an additional test layer after NIST Test Tools.
- Vendors are interested in participating in an IHE DEV/PCD Connectathon.

***Thank You!***

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# Systematic Names for Observations

Measurements and enumerations have Systematic Names assigned to them.

**Base Concept:** *Electric Potential, Magnitude, Duration, Angle, Pattern, ...*

**First Descriptor:** *Has origin, has method, has property, ...*

**Second Descriptor:** *Body subsystem, specific organ or organ function, measurement site, ...*

**Third Descriptor:** *Organ system (general), Device type (general), ...*

For example, the terms MDC\_ECG\_HEART\_RATE and MDC\_VENT\_PRESS\_AWAY\_RISETIME\_CTLD (risetime for a controlled, *aka mandatory*, inflation) would have the following Systematic Names:

Systematic Name			
<i>Base Concept</i>	<i>First Descriptor</i>	<i>Second Descriptor</i>	<i>Third Descriptor</i>
Rate	Beats	Heart	CVS
Duration, pressure, risetime	Controlled Inflations	Gas	Ventilator, Airway

The Base Concept is typically the most general top-level concept and the first and second Descriptors provide greater detail, followed by the third descriptor indicating the top-level body system, organ or device type. The Base Concept and Descriptors may have multiple comma-separated sub-fields, typically with a left to right hierarchy, to provide additional detail to further distinguish terms.

(added slide on January 25, 2022)