BICEPS Modelling of Clock & Battery

Revision 1, 2018-10-11

Orientation

SDC

11073-20702
- **MDPWS**
- Transport via Web Services

11073-10207
- **BICEPS**
- Device modelling via XML-Schema

11073-20701
- **Glue**
- Connects MDPWS to BICEPS
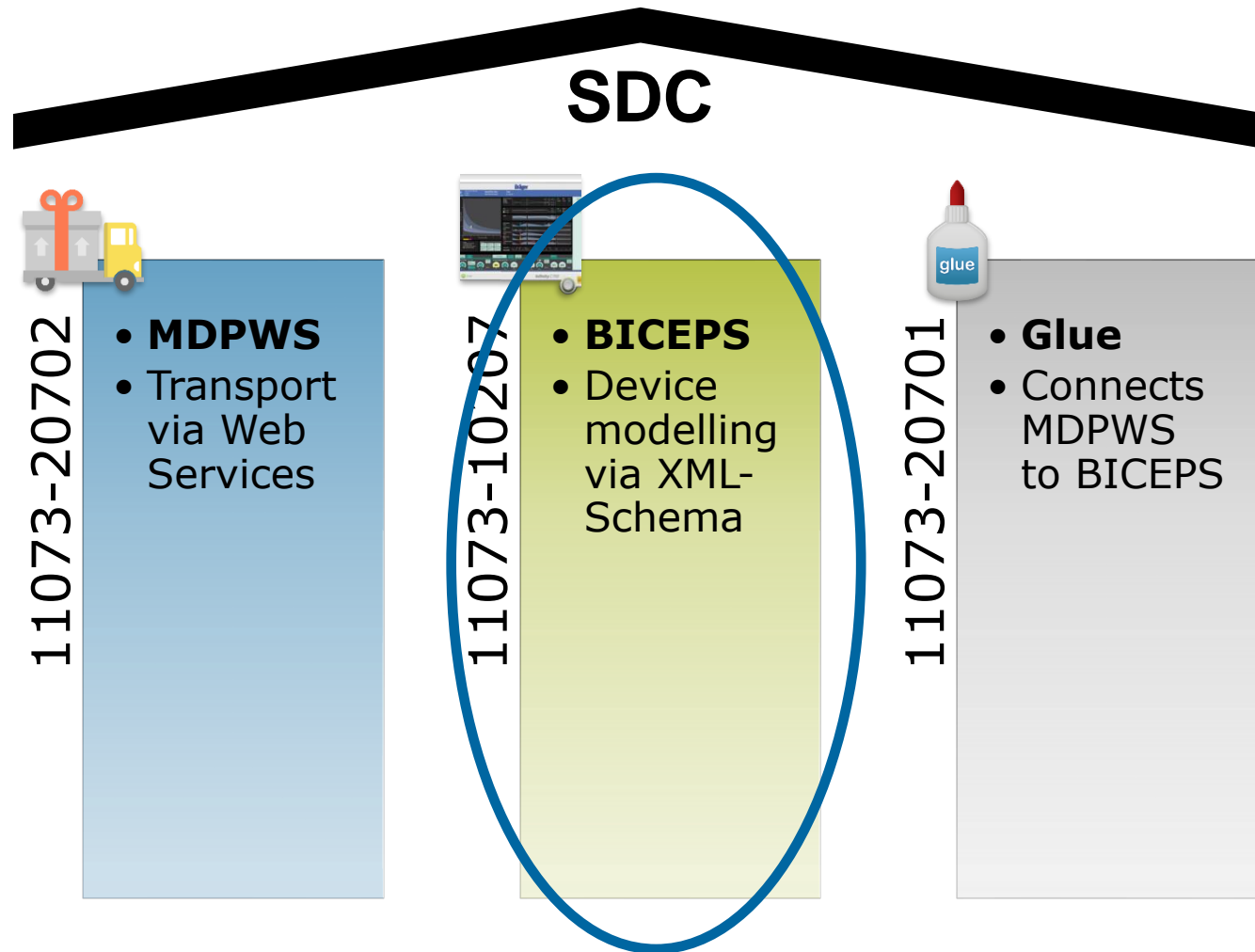
DEFINITION

Definition
Clock

The clock object provides all capabilities regarding date/time handling and time synchronization. Its presence does not imply any hardware or software specific support.
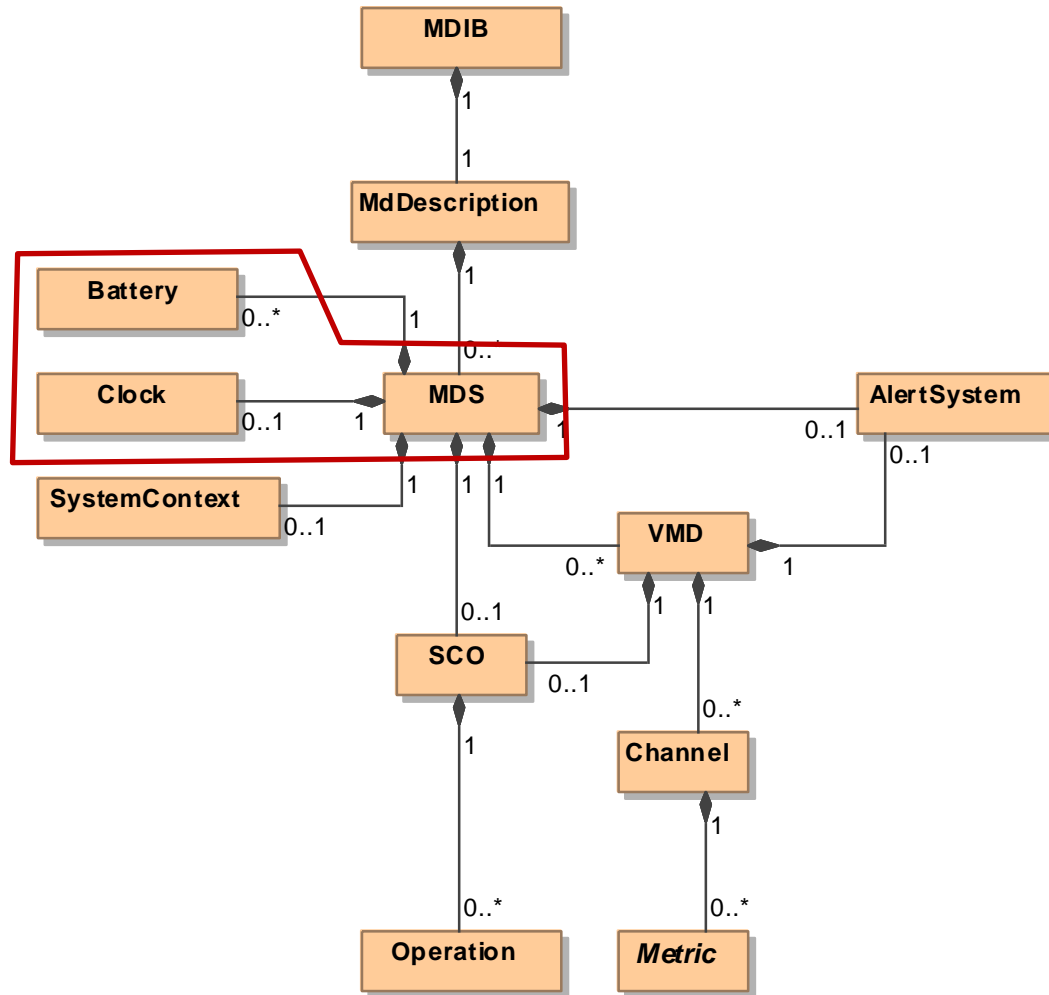
Definition
Battery

The battery object provides all capabilities regarding power supply through batteries. Hence, it is only meaningful to medical device systems that support batteries.

CLASS DIAGRAM

Class diagram
Placement in MDIB

PROPERTIES

Properties

pm:ClockDescriptor

Resolution [optional]

- Time between actual ticks of the clock in microseconds.

TimeProtocol [list]

- List of supported time protocols as pm:CodedValues

Properties

pm:ClockState I

DateAndTime [optional]

- Integer that counts the milliseconds between the current time and midnight, January 1, 1970 UTC without leap seconds
- Not part of versioning; may be inserted only when directly requested

RemoteSync

- Defines if clock is synchronized to an external source, or manually by operator

ReferenceSource

- If given, the clock's external source, e.g., an NTP server address

Accuracy [optional]

- Maximum error of the absolute time relative to a primary reference clock source (in seconds)

Properties

pm:ClockState II

LastSet [optional]

- Timepoint when the absolute time was last set

TimeZone [optional]

- Time zone and DST setting of the clock in POSIX format (ISO/IEC/IEEE 9945)

CriticalUse

- Is the clock information actively being used in medical grade algorithms/protocols?

ActiveSyncProtocol [optional]

- Protocol that is actively being used for time synchronization

Properties

- Every attribute that requires a special unit of measure, is defined as a pm:Measurement, which is a tuple of
  - Decimal value
  - A pm:CodedValue to describe the decimal value's unit

CapacityFullCharge [optional]

- Current battery capacity after a full charge.Bullet point

CapacitySpecified [optional]

- Rated capacity the manufacturer claims for the battery

VoltageSpecified [optional]

- Specified battery voltage

Properties
pm:BatteryState

ChargeStatus [optional]
- Current charge status of the battery (e.g., full, charging, discharged)

ChargeCycles [optional]
- Number of charge/discharge cycles

CapacityRemaining [optional]
- Remaining capacity at current load

Voltage [optional]
- Voltage between the terminals of a cell or battery when being discharged

Current [optional]
- Electric current delivered by a battery during its discharge

Temperature [optional]
- Current battery temperature

RemainingBatteryTime [optional]
- Current remaining time until battery is discharged

Thank you for your attention!

Contact information

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