IPSO/LwM2M data model: re-usability considerations
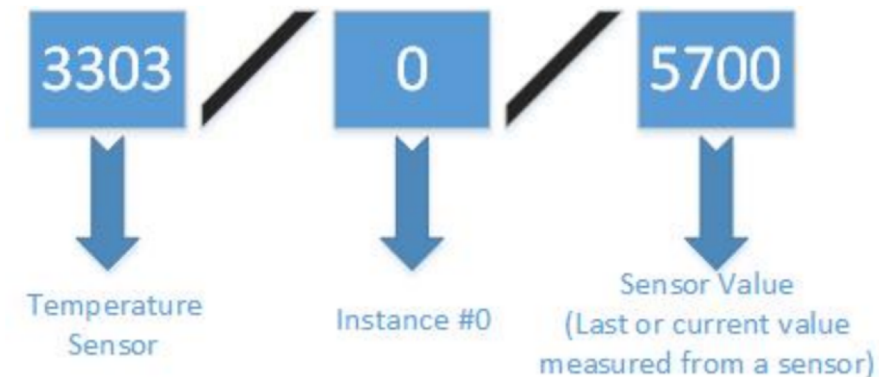
WISHI call 17.1.2019

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Background

- Re-usability is good
  - Design once, use many times: save time and money
  - Re-use of tools, processes, etc.
  - Facilitate interoperability
- Here IPSO model as example data model
  - we should collect different models from different organizations
- Goal: guidance and best practices for data model design

IPSO information and data model

- Set of *resources* that grouped into *objects*

- Devices/things modeled as a set of objects

- Numeric IDs for objects and resources
  - used as path components

- Instance IDs for having multiple instances of objects and resources

- Composite object option for grouping objects

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Temperature Sensor / Instance #0 / Sensor Value (Last or current value measured from a sensor)

Resources

- The atomic values (string, float, Boolean, time, etc.)
- Defined name, data type, operation, description
- Optionally also defined range, unit, is mandatory/multi-instance
- Can be object specific or reusable
  - different numeric ranges for each
  - Re-usable resource examples: current value, min value, max value,…
- Re-usable resource characteristics are fixed after registration
  - E.g., if range is defined, it can't be re-defined in a new object

Versioning

- Since LwM2M v1.1
- If new version of existing object is needed, new version can be issued
- Minor version for backward compatible changes. Major version for non-backward compatible changes.
- Version indicated when registering/discovering object
- Merits of versioning feature still debated