OPC & MES DAY FINLAND 2014

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metso

Interoperability with different implementation languages

Presentation structure

- Interoperability evaluation with different hardware platforms, operating systems and implementation languages
  - Application examples
- Prototyping OPC UA information model for legacy integration
  - Data models

OPC UA Interoperability

Evaluation with different operating systems

- Target hardware & Operating system:
  - BeagleBone Black (ARM), Ubuntu 13.04 Linux
    - OPC UA Stack pure javascript
  - Lenovo ThinkPad (Intel), Windows 7
    - OPC UA Stack C#
    - OPC UA Java
  - Samsung Note 10.1 (ARM), Android 4.2
    - OPC UA Java
  - Vuzix M100 (ARM), Android 4.0.2
    - OPC UA Java
  - Beckhoff PLC (Intel), Windows CE
    - OPC UA Ansi C
  - Wapice WRM (ARM), Linux
    - OPC UA Ansi C

OPC UA client in node-red

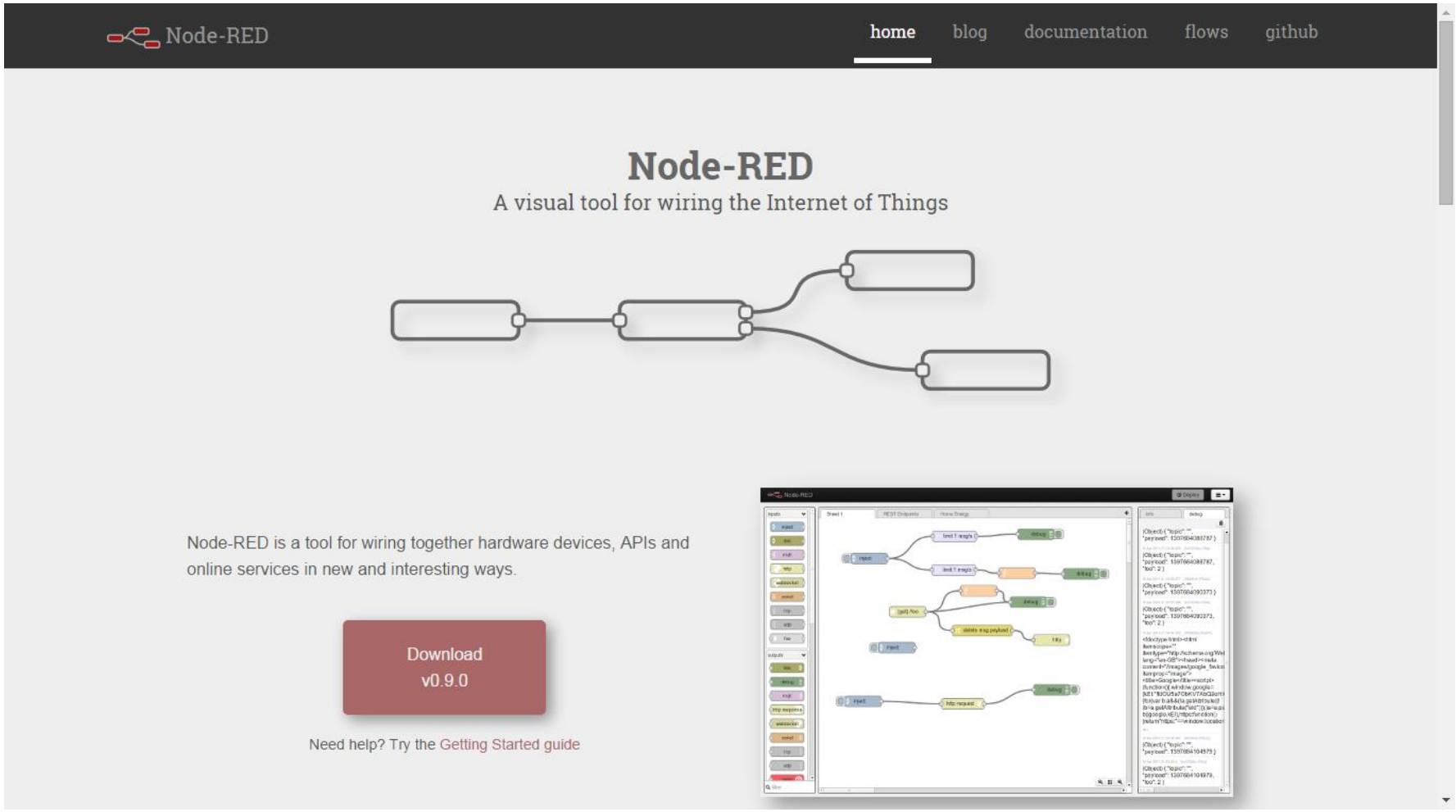
Bluetooth LE sensor integrated with OPC UA client (javascript)

- TI Sensortag measuring
  - Advertises information
- OPC UA client writing data to OPC UA server

OPC UA server

Node-red

Visual flow + event based messaging

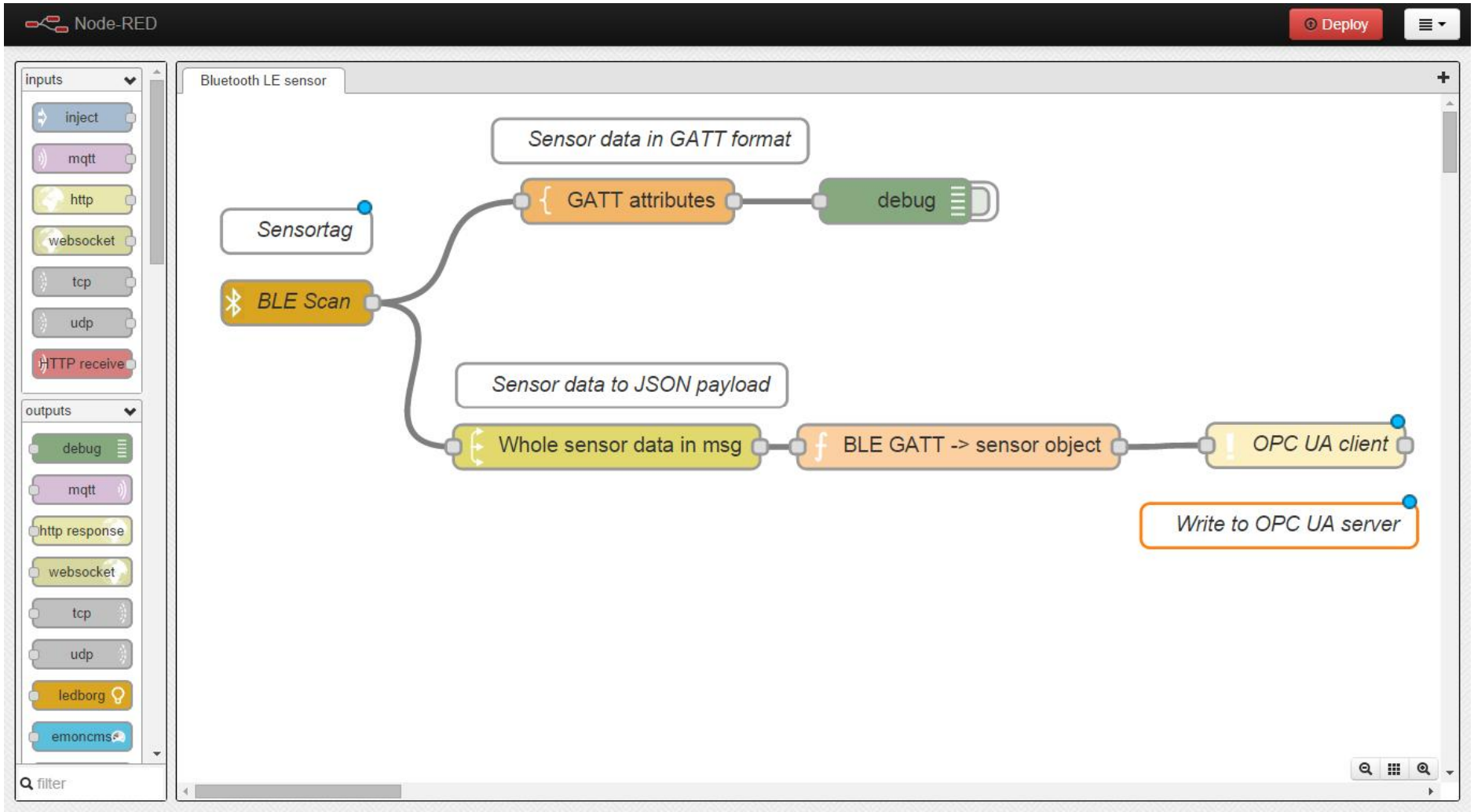


Node-RED is a creation of **IBM** Emerging Technology

Node-red.org

OPC UA client in node-red

Bluetooth LE sensor integrated with OPC UA client (javascript)



Pure nodejs OPCUA SDK, npm install node-opcua

By **Etienne Rossignon**

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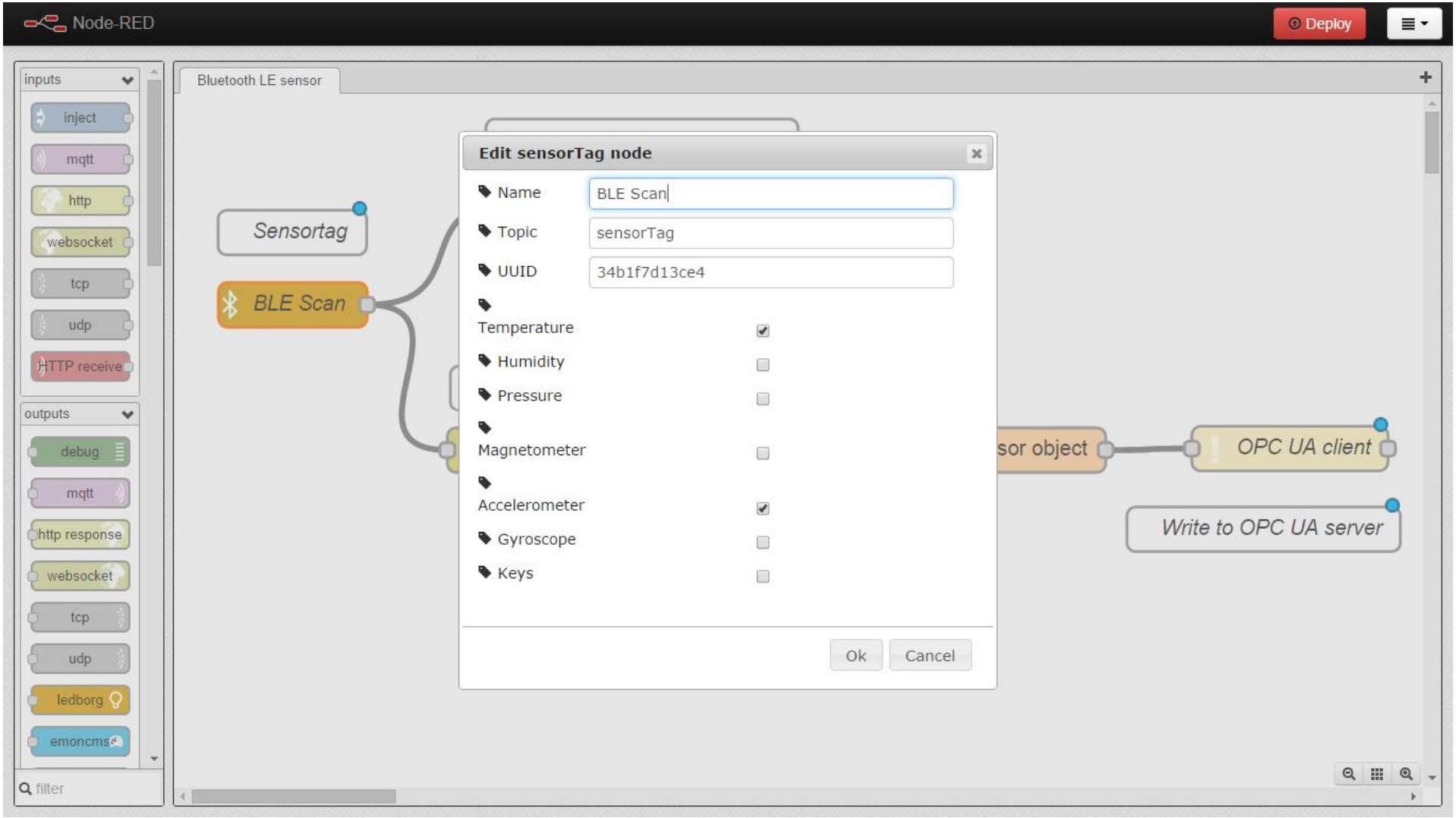
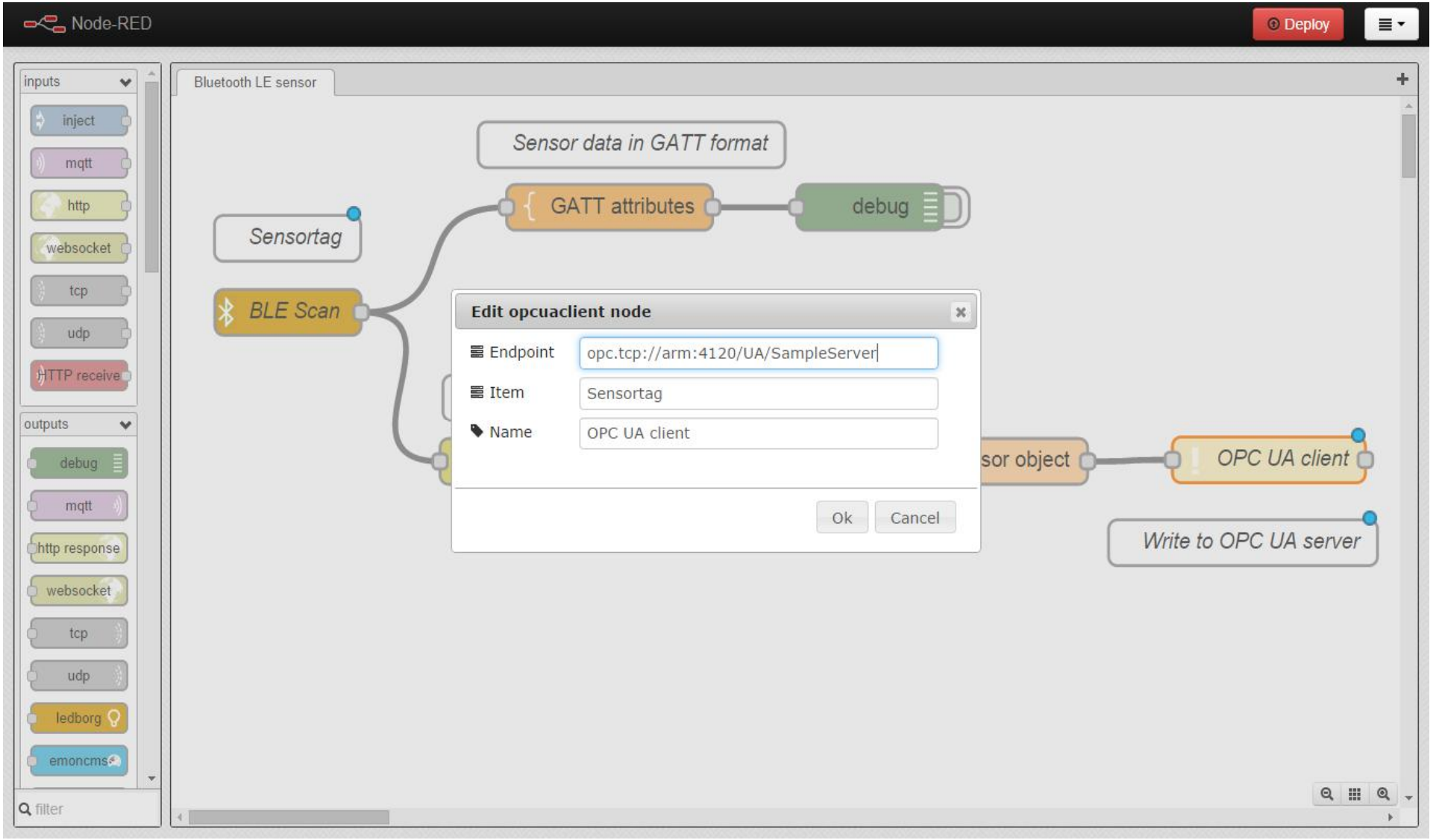
Node-red node parameters => efficient reuse



Node-red OPC UA client parameters



Other OPC UA components

- UA Expert: Used in Windows7 to browse address spaces
- Samsung Note 10.1 : Prosys OPC UA client
- Beckhoff PLC: OPC UA server

- Vuzix M100 Smart glasses (User interface)
  - Youtube video Cyberman: https://www.youtube.com/watch?v=jHFCork_R1Q
  - Concept test platform

OPC UA Information model

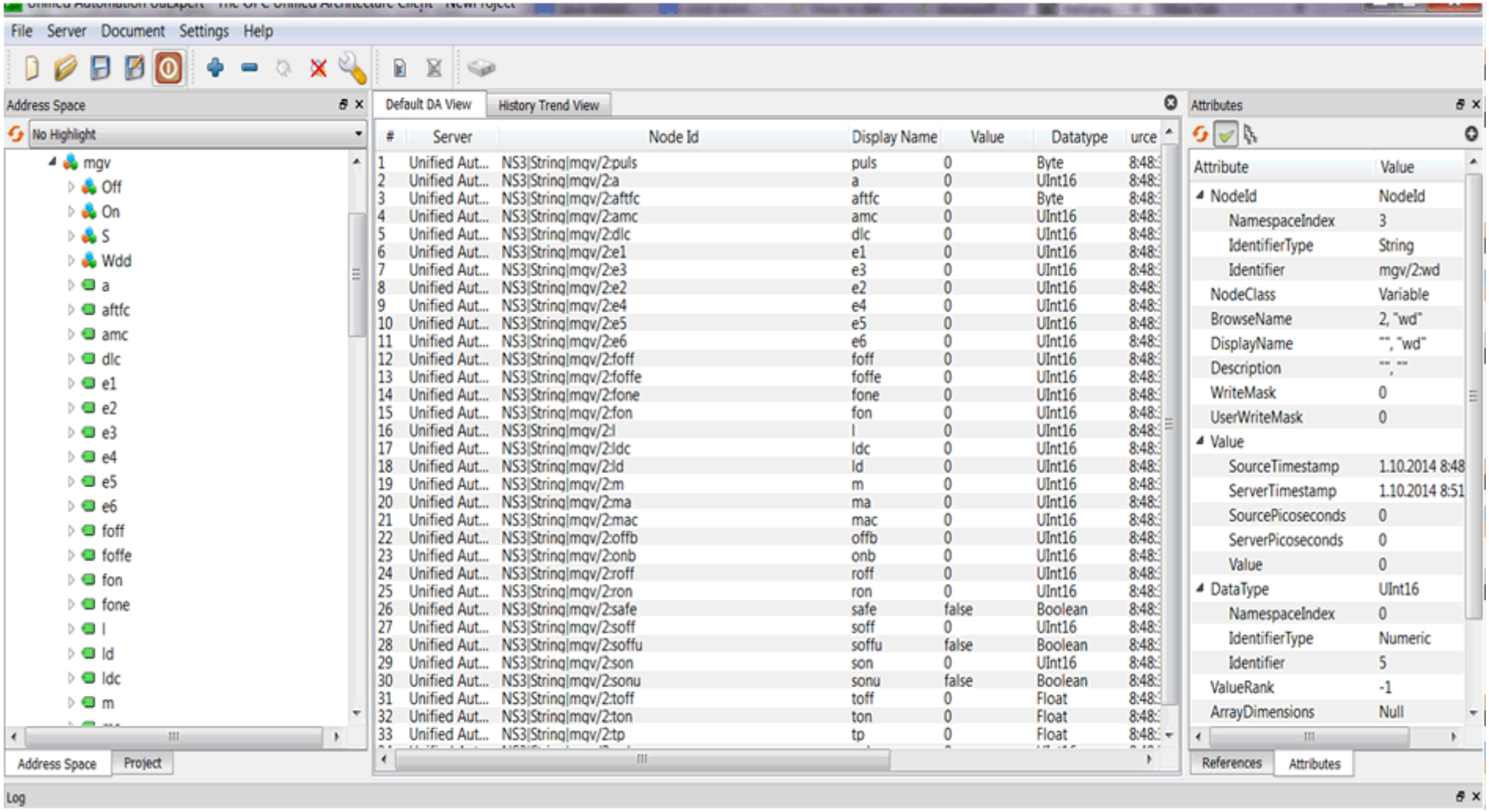
Prototyping legacy integration

- Test 1, generate OPC UA information model from existing types
  - Transformation from internal encoding to OPC UA encoding
- Test 2, instead of using codegen information model build on run-time
  - More generic
- Test 3, use of Event objects in information model
  - Parameters read from existing runtime system
- Next targets:
  - Inheritance
  - Test architecture
  - Scalability & performance

- NOTE: Implementation based on Prosys java SDK v2.0.2

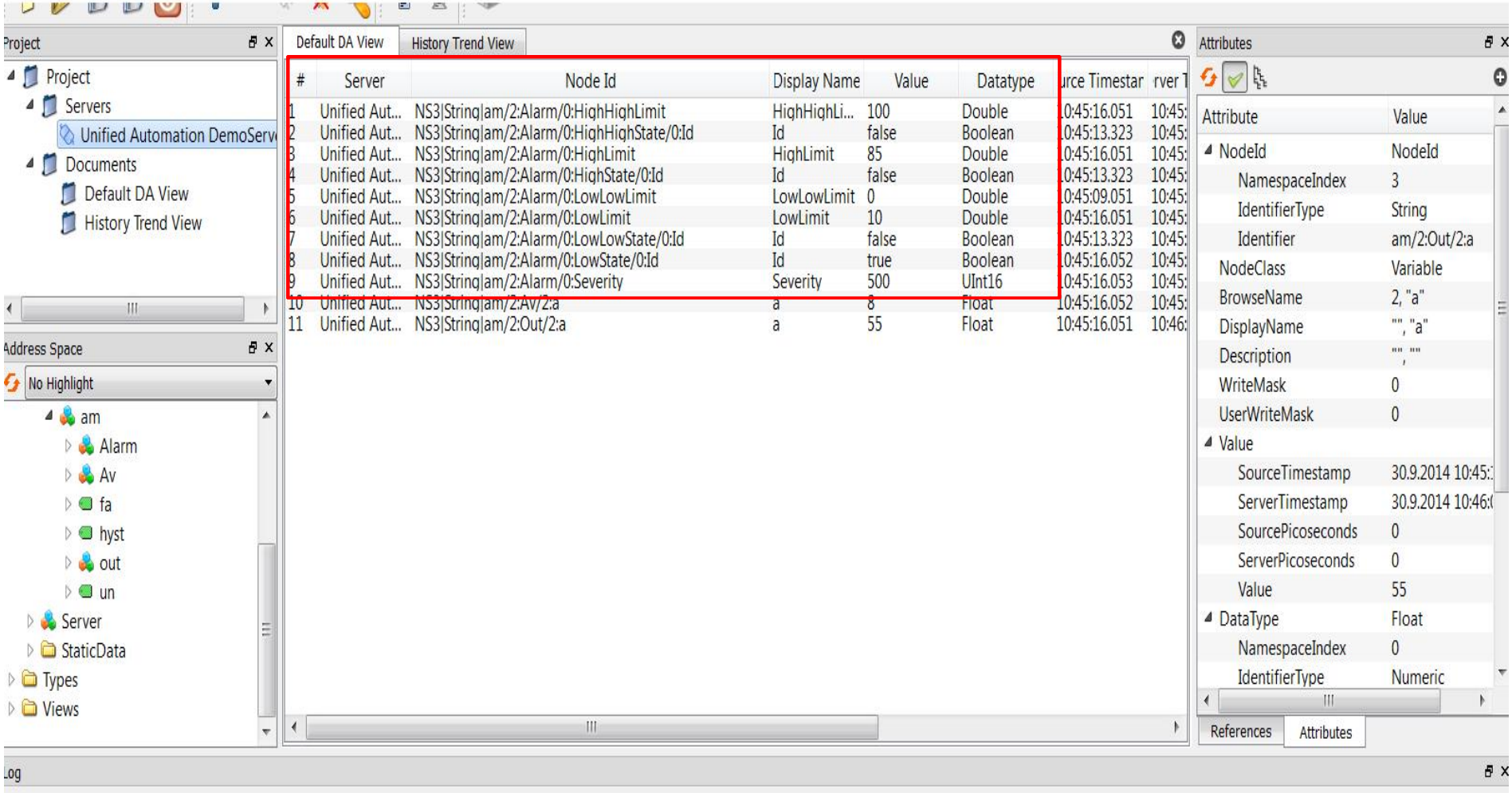
MetsoDNA magnetic valve function block

MetsoDNA type mgv



MetsoDNA analog measurement function block

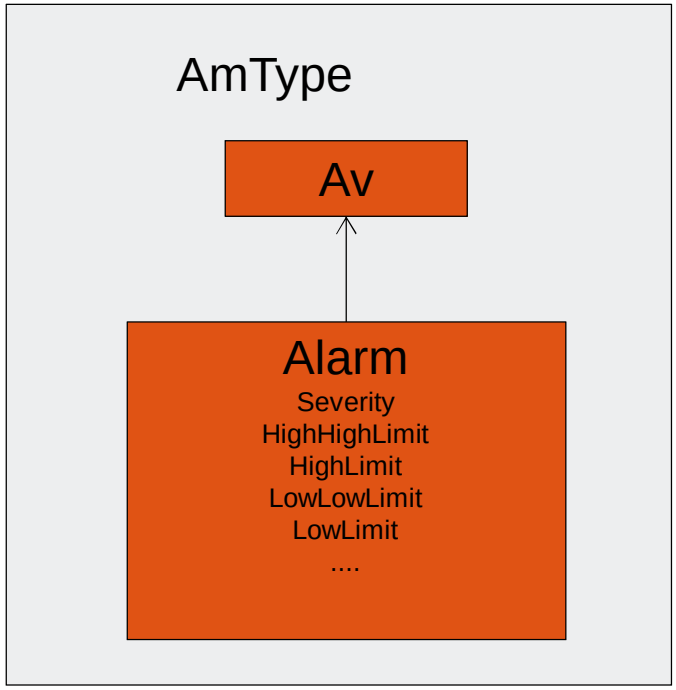
Event objects



Integrated Alarm management

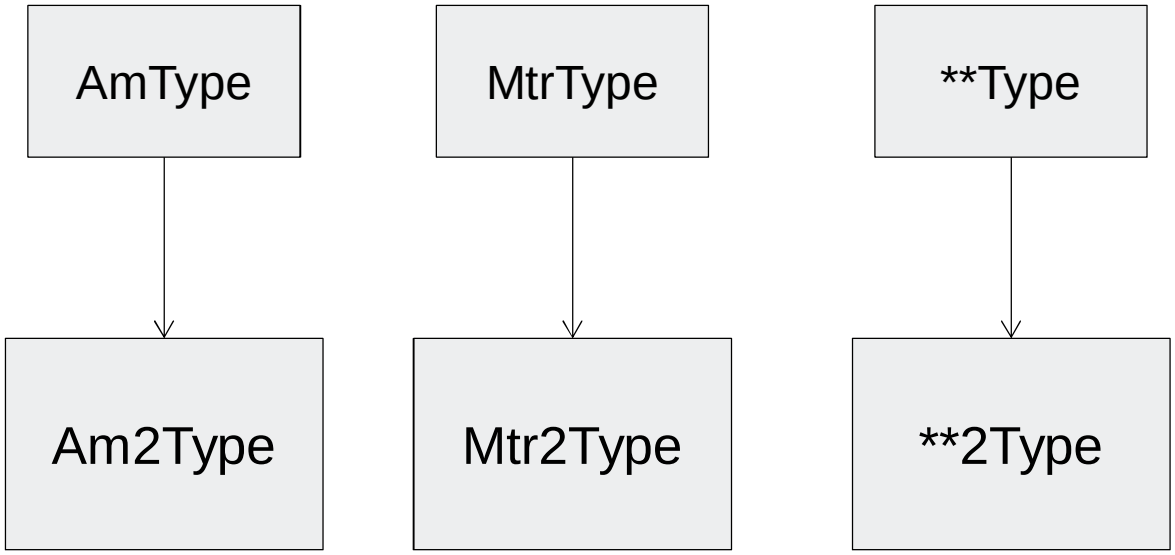
Prototype principle, under testing

- Non Exclusive Limit Alarm is added in the OPC UA Object Type
- Alarm limits are from DNA configuration: hh, h, l, ll
- Alarm is triggered by DNA alarm event output: hha,ha,la,lla
- Example



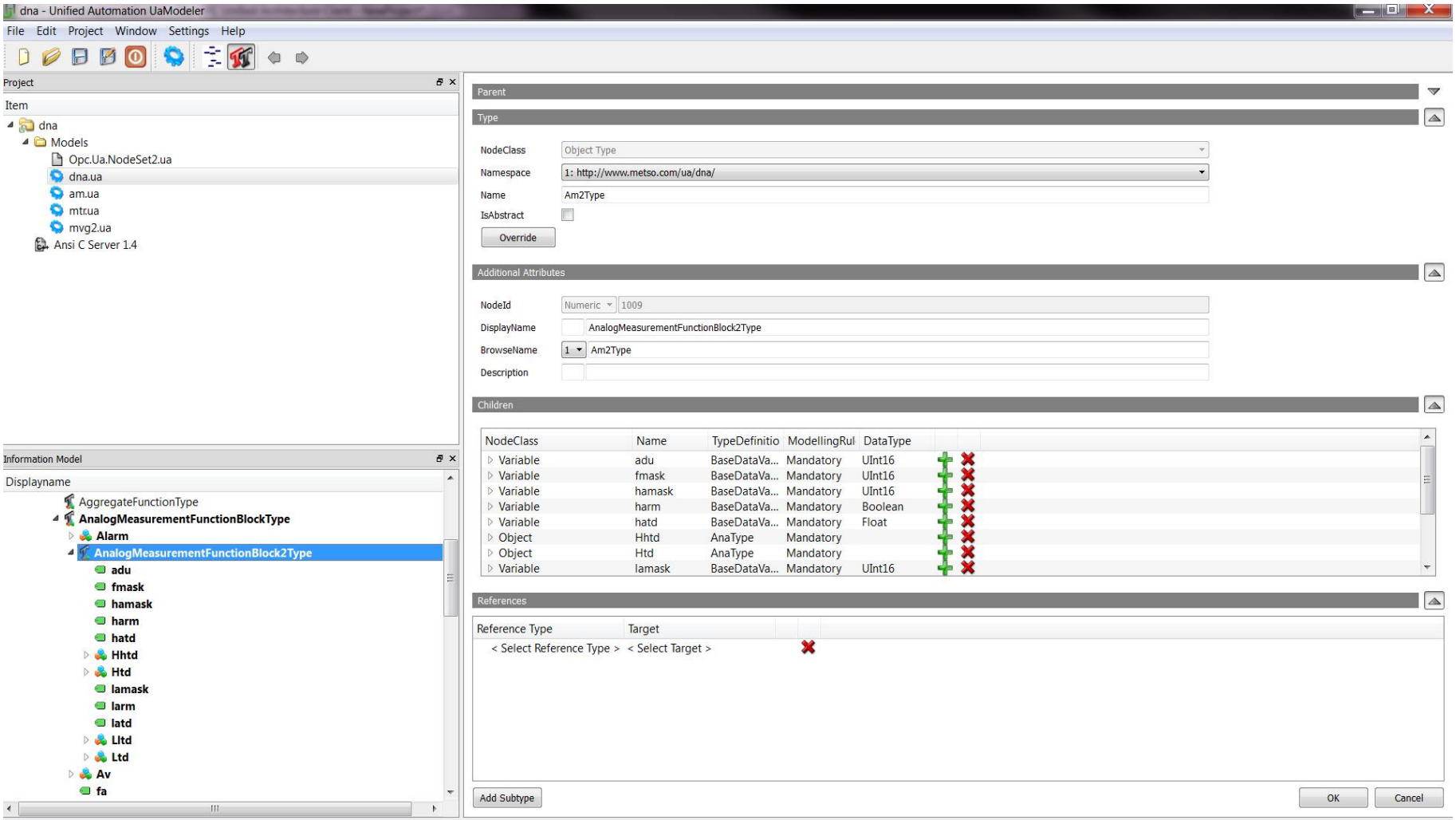
Inheritance in OPC UA Object Type

Basic MetsoDNA type, extended types inherited

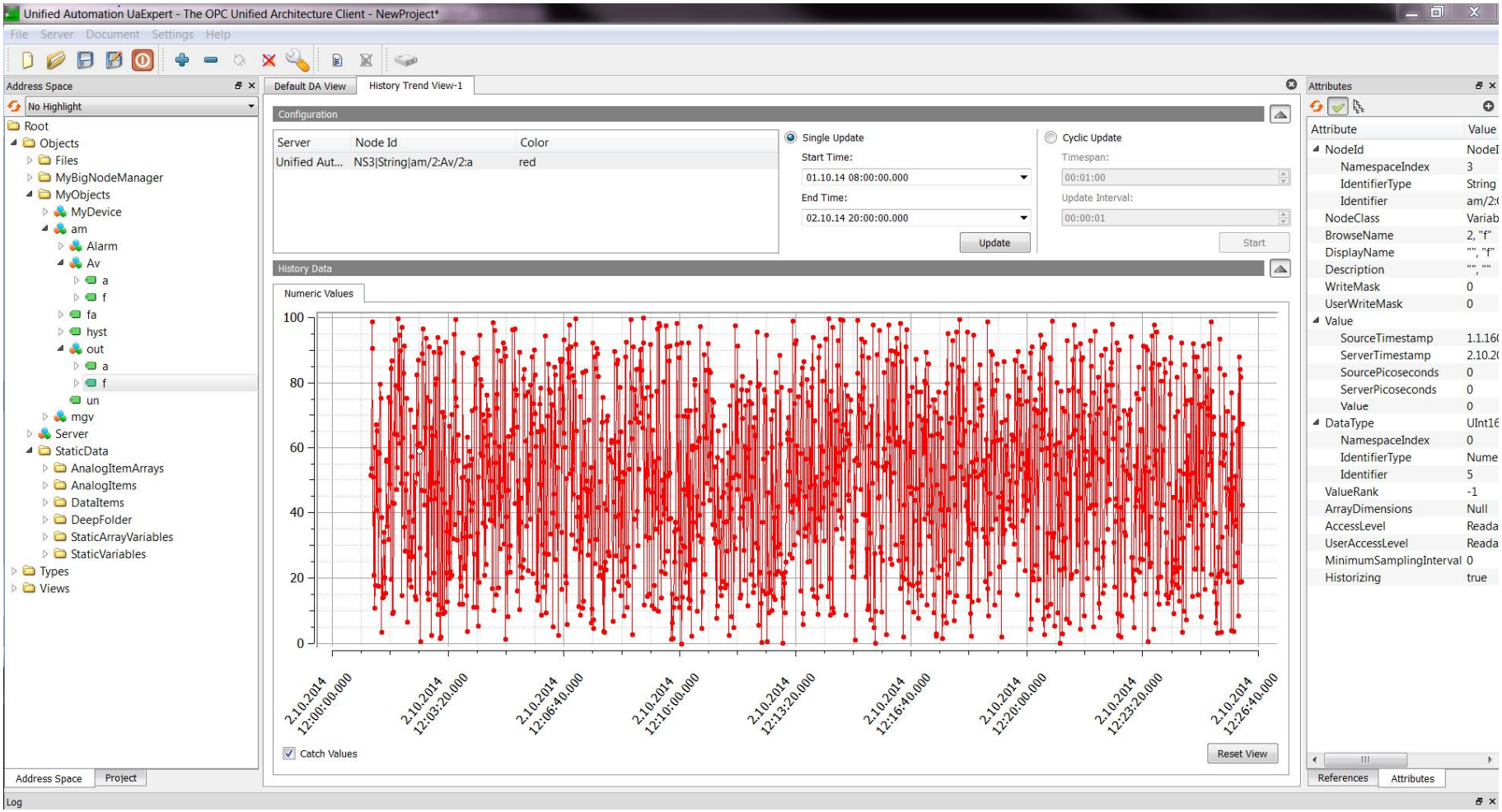


Type created in Ua Modeler

Example for AmType and Am2Type



History trend from UA Expert



Questions / comments ?

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