

pslm-poweff

... and its relation to tlm-philatelist

Energy telemetry collection framework
suitable for existing equipment

IETF 122, March 2025

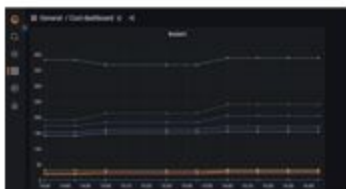
Marisol Palmero, Cisco
Jan Lindblad, All For Eco
on behalf of the authors

Philatelist and POWEFF in GREEN WG

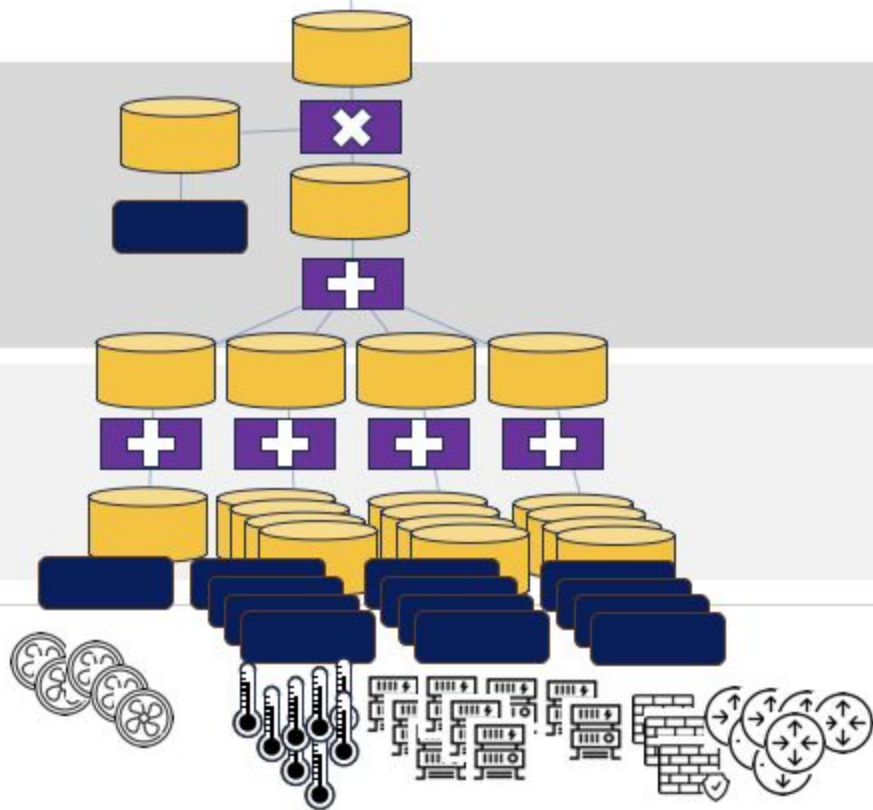
- This is where the right people are
- This is where the timeline matches

Core Principles

- Collect Existing Metrics from Existing Equipment
 - Can't wait for new generation of devices
 - All kinds of devices, protocols and formats, including software and cooling systems
- Content Declaration for all Collected Metrics
 - Let's not mix apples and oranges to make a graph
 - Expect someone else to read this data
- Design Together with the Users(incl. stakeholders)
 - Connect with CO2-accounting world
 - Learn from and teach them
- Create a Pipeline
 - Transparent
 - Configurable
 - Reusable components
- Pipeline Stages
 - Collection
 - Aggregation
 - Processing
 - Display
 - Decision



Philatelist, Telemetry Framework



AGGREGATOR role (controller)

- Transform and aggregate data flows
- Deliver TSDB buckets with traceable, vendor agnostic, well defined data

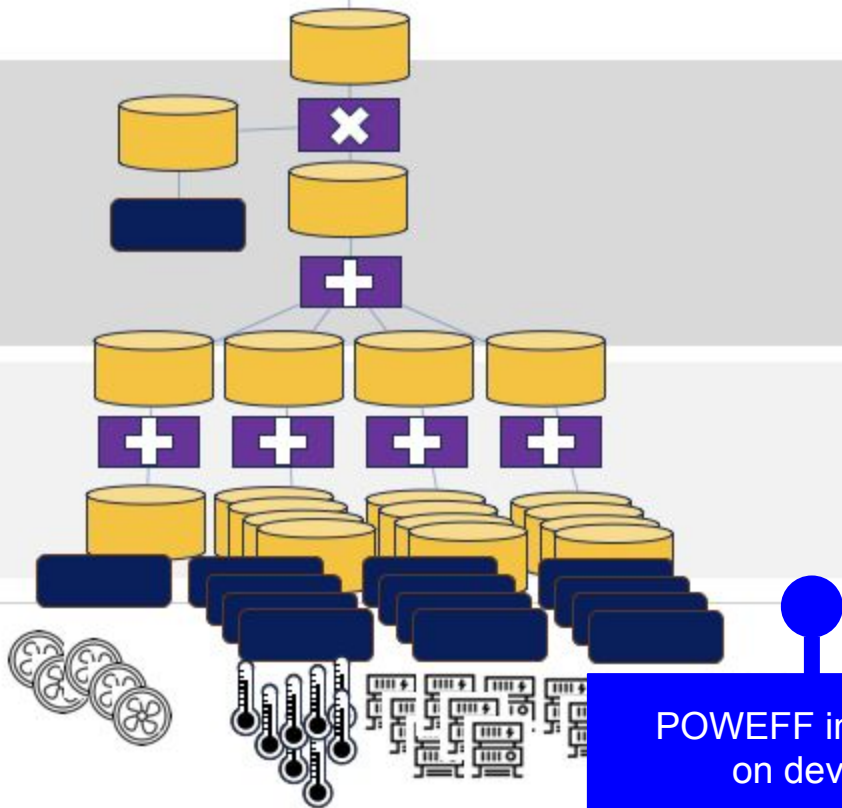
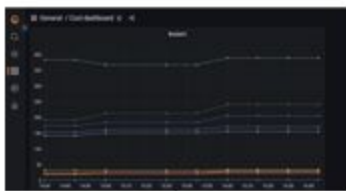
COLLECTOR role (controller)

- Collect from all kinds of sources
- Add YANG + Metadata as needed

PROVIDER role (device)

- Devices may not be aware
- Scattered Sensors already abundant

Philatelist, Telemetry Framework



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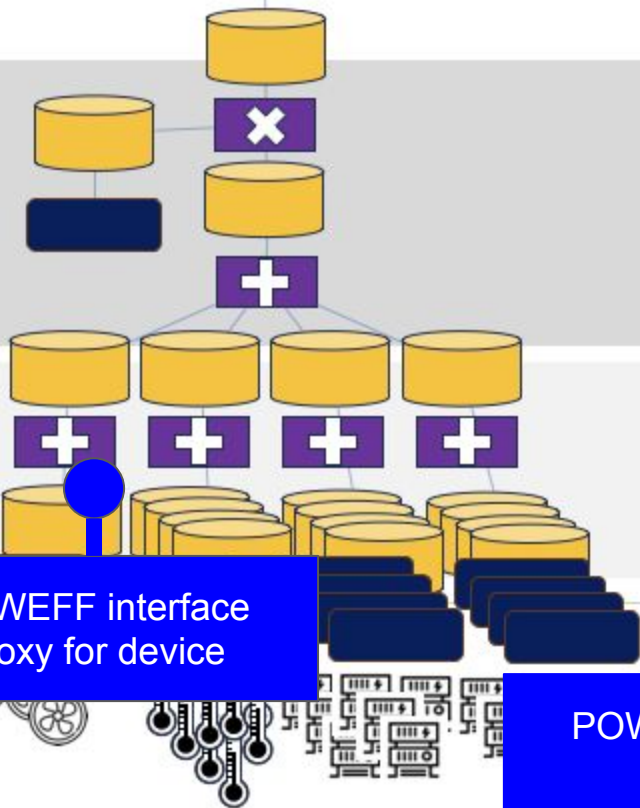
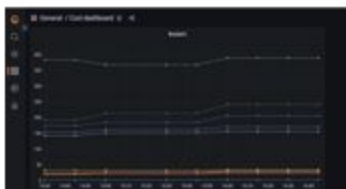
PROVIDER role (device)

POWEFF interface
on device

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Philatelist *working with* Poweff

Work with what you have today

Device Sensor & Control list

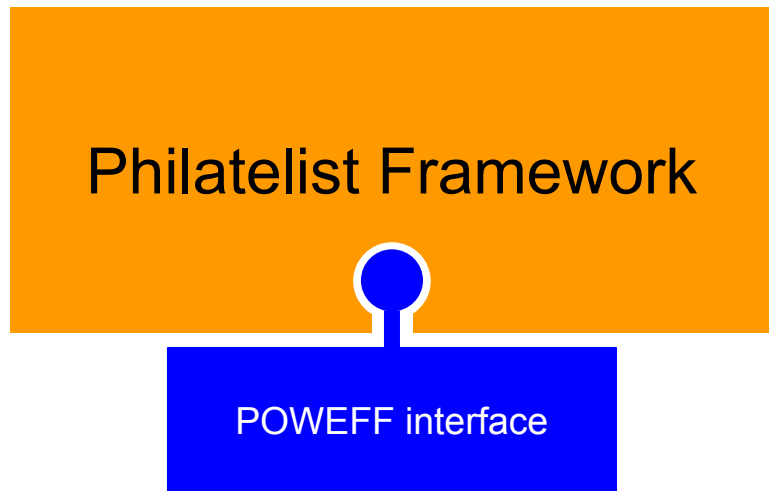
- Point to existing sensors
- Provide missing metadata
- Group related sensors into named "dashboards"
- List may be provided off-box

Future, Standard Dashboards

LEVEL

1. Report total device power
2. [1] + power per subsystem
3. [2] + power control per subsystem
4. [3] + power per "service" i.e. delivered value
5. [4] + power control per service

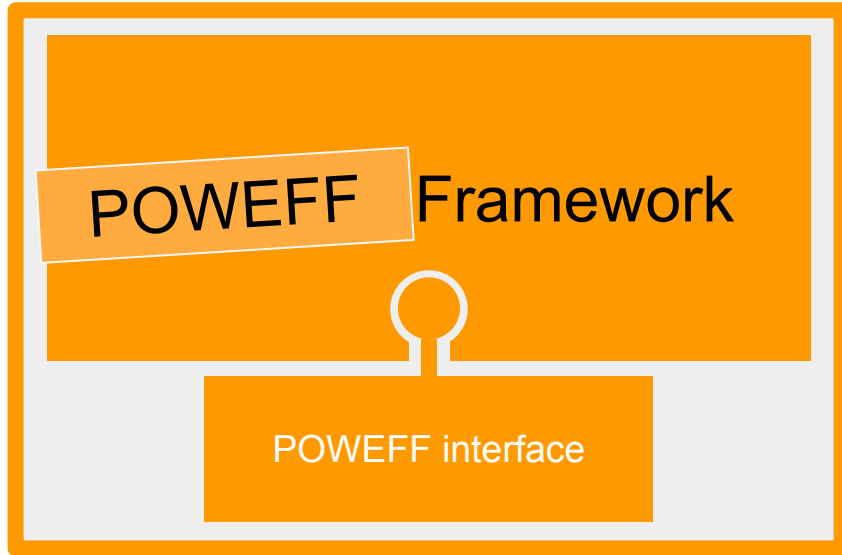
Philatelist and POWEFF are Separate Things ...



Philatelist: Generic YANG framework for collection/aggregation/processing and TSDB storage of labelled data.

POWEFF depends on Philatelist.
Defines units: Volts, kWh, Kelvin, ...
Sensor Types: st-p-in-apparent-watt
Standard dashboards.

... or Maybe They Aren't?



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Philatelist and POWEFF vs other drafts in GREEN WG

- **Augment the inventory models in IVY:**
 - Adapt to include a wide range of components, devices, and services, ensuring responsiveness to both current and legacy systems
- **Legacy integration:**
 - Prioritize reusability and sustainability alignment with energy consumption reduction goals.
 - Avoid redefining new terms: “energy-saving-mode”, “energy-saving-method”, “energy-saving-power-state”, “energy-saving-operator”. They may not benefit legacy products.
- **Unified metrics and units handling:**
 - Accommodate diverse forms of metrics and units through a robust aggregator function, enabling streamlined consolidation and analysis
- **Diverse data source responsiveness**
 - Promote interoperability
- **Sensor calibration and accuracy enhancement:**
 - Focus on the precise calibration of sensors to improve accuracy and reliability of data, critical for informed decision-making.

Open Discussion & Next Steps

- Concept of Embedded Energy
- The Principle of Doing More with Less:
 - Energy Efficiency vs. Total Energy Consumption:
- Inventory:
 - Passive inventory. For example: reducing the number of cables, packaging, etc
- Analysts' Perspective:
 - Relating to the Product Carbon Footprint. PCF In Use Phase is still estimated value vs measured
 - Addressing the Biggest Challenge: Scope 3 Emissions

Propose GREEN WG

Adoption of

- draft-tlm-philatelist
- draft-pslm-poweff
- draft-kl-yang-label-tsdb