

# A Data Manifest for Contextualized Telemetry Data

[draft-ietf-opsawg-collected-data-manifest-02](#)

B. Claise (Huawei), J. Quilbeuf (Huawei), D.  
Lopez (Telefonica), I. Dominguez (Telefonica), T.  
Graf (Swisscom)

IETF 118, OPSAWG

# Goal & Problem Statement

- Goal is not to expose new information via YANG but rather to define what needs to be kept as metadata (or Data Manifest) to ensure that the data can still be interpreted correctly even:
  - if the source device is not accessible (from the collection system)
  - If the source device has been updated or has a new configuration
- End goal: analyze the data, from the data collection system, with the proper context, for anomaly detection and, in the end, closed loop automation
- Per-node capability discovery exists
  - YANG Modules describing Capabilities for Systems and Datastore Update Notifications, [RFC9196](#) + YANG Instance Data File Format, [RFC9195](#)
  - Per-Node Capabilities for Optimum Operational Data Collection , [draft-claise-netconf-metadata-forcollection-03](#)
- But how were data actually metered, under which circumstances?

# Data Collection Vantage Point

No updates since t1

- Problem: Telemetry issue?
- Problem: Sender overloaded?
- Problem: bug?
- No problem: long telemetry cadence?
- No problem: "on-change"?
- No problem: "suppress-redundancy"?

Counter1 = 42  
Status = UP



End goal: analyze the data, from the data collection system, with the proper context, for anomaly detection and, in the end, closed loop automation

# Proposal: Data Manifest

- Data Manifest composed of 2 YANG models for storing the context:
  - **Platform Manifest**: part of the Data Manifest that completely characterizes the platform producing the data.
  - **Data Collection Manifest**: part of the Data Manifest that completely characterizes how and when the telemetry was metered.
- “MUST be streamed all with the data and stored along with the collected data.”
- “In case the data are moved to different place (typically a database), the data manifest MUST follow the collected data.”

# Changes

- Added examples of platform and data manifest

```
"ietf-platform-manifest:platforms": {
  "platform": [
    {
      "id": "PE1",
      "yang-library": {
        "module-set": [
          {
            "name": "operational"
          }
        ],
      },
      "schema": [
        {
          "name": "operational-schema",
          "module-set": [
            "operational"
          ]
        }
      ],
      "datastore": [
        {
          "name": "ietf-datastores:operational",
          "schema": "operational-schema"
        }
      ]
    }
  ]
}
```

```
"ietf-data-collection-manifest:data-collections": {
  "data-collection": [
    {
      "platform-id": "PE1",
      "yang-push-subscriptions": {
        "subscription": [
          {
            "id": 4242,
            "datastore": "ietf-datastores:operational",
            "datastore-xpath-filter":
              "/ietf-interfaces:interfaces/interface/enabled",
            "on-change": {},
            "receivers": {
              "receiver": [
                {
                  "name": "yp-collector",
                  "state": "active"
                }
              ]
            }
          },
          {
            "id": 4243,
            "datastore": "ietf-datastores:operational",
            "datastore-xpath-filter":
              "/ietf-interfaces:interfaces/interface/statistics/in-octets",
            "periodic": {
              "period": 10000
            },
            "current-period": 20000,
            "receivers": {
              "receiver": [
                {
                  "name": "yp-collector",
                  "state": "active"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}
```

# Next Steps

- Work on the YANG modeling issue
  - Current version in draft is based on copy-pasted modules)
  - New “Static Mount” (name to be changed), would be a normative reference.
- Interaction with the SBOM effort:
  - Investigating whether <https://datatracker.ietf.org/doc/draft-lopez-opsawg-yang-provenance/> could be used to make the link

# Open Questions

- Handling absence of values: authors consensus is that it should be out of scope
- How do we make the link with inventory efforts going on (IVY, RFC8345)? Notably for the platform-id, using the node id for RFC8345?
- Are we missing anything in the current form of the data manifest?

Feedback, suggestions, issues, PRs:

<https://github.com/JeanQuilbeufHuawei/draft-collected-data-manifest>