WT-508 and YANG-Push to Message Broker Comparison

Shared synergies and common interests

zhenghaomian@huawei.com
david.zhujian@huawei.com
thomas.graf@swisscom.com

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Agenda Items

- Hight Level Requirements
- Architecture, Component and Interface Comparison
- Key Findings and Possible Action Points
- Next Steps

High Level Requirements

What we both care

- Standard Interface for Subscription Management
  -> NETCONF and RESTCONF?
- Standard Interface for Network Data Collection
  -> YANG-PUSH and IPFIX?
- Standard Data Modelling
  -> YANG?
- Standard Models covering management and forwarding plane
  -> BBF augmented IETF YANG modules?
- Standard Interface for Data Delivery
  -> Message Broker?

High Level Requirements

What IETF cares and BBF probably as well

- Discoverable subscription capabilities
  -> **Subscription Automation**: Not all network elements have the same capabilities
- Notifications of subscriptions state and schema changes
  -> **Subscription Lifecycle**: Subscriptions and Schema can change over time
- Accessibility of schema and schema tree
  -> **Data Processing Automation**: Schema and dependencies needs to be obtainable from publisher and schema registry
- Notification metadata (hostname, sequence-number, observation timestamping)
  -> **Data Correlation Automation**: From where, when and with which data quality

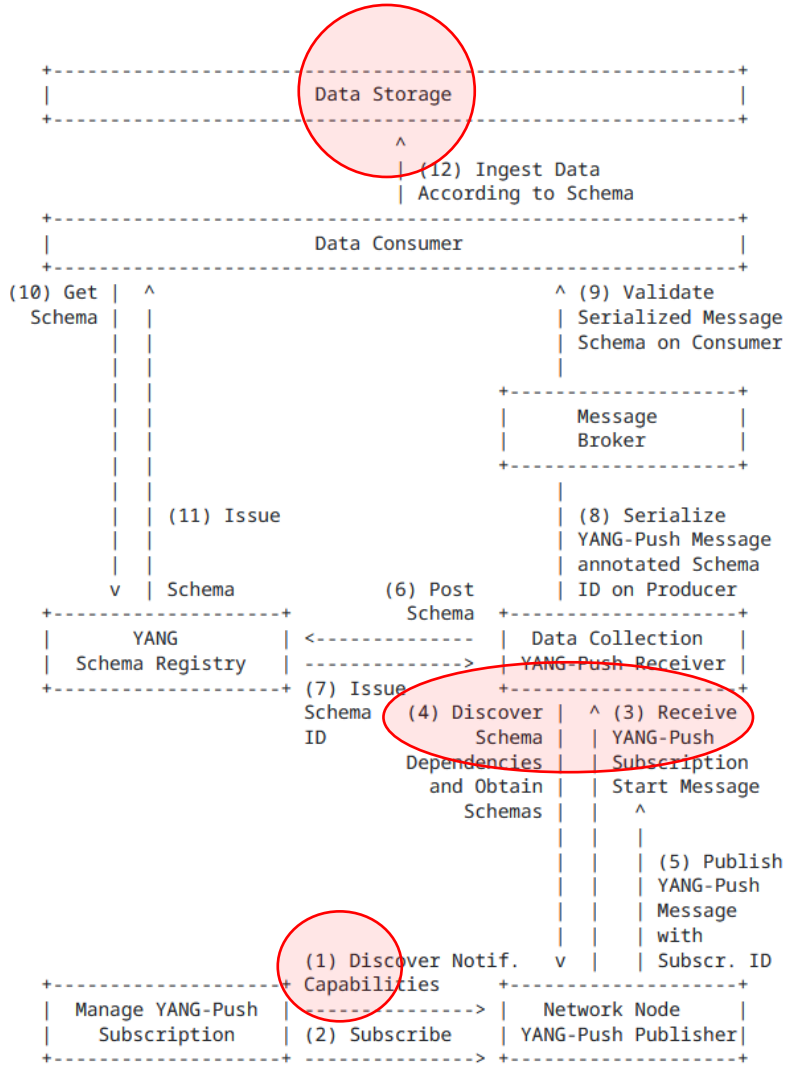
High Level Requirements

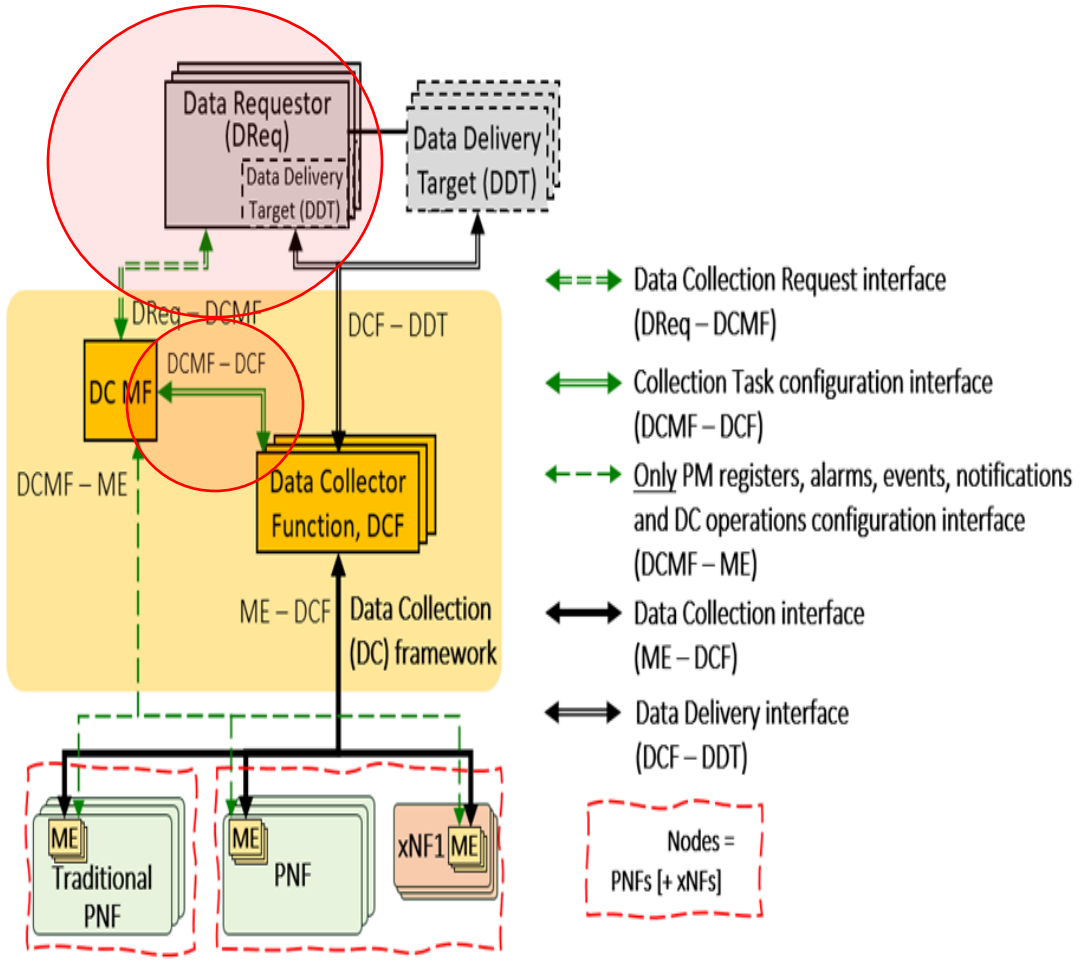
What **BBF cares** and IETF probably as well

- Network Telemetry (RFC 9232)
  -> **Holistically**: **Beyond YANG** and management plane, IPFIX forwarding plane, BMP control plane. Not only applies to access but also to a broader IP domain including edge.
  --> At BBF: Network Trend Analysis, Proactive Assurance, Site/Node/Area Survey, Pre-Qualification, Zero Touch Provisioning, Intensive Care, Trouble-Shooting, Line re-Profiling, Directed data retrieval, Service activation and change, Proactive change on severe degrade/robustness/ rate improvement, Claim based change, Network proactive assurance on THR crossing, Service migration, Profile clean-up
  --> At IETF: SIMAP, Knowledge Graph, Network Observability, Network Anomaly Detection
- YANG Data Modelling
  -> IETF and IANA YANG modules (ietf-hardware.yang ietf-interfaces.yang iana-hardware.yang iana-if-type.yang iana-if-type.yang) and augmented with BBF TR-383 and TR-385 based YANG modules.

Architecture

How they compare





Component and Interface

How they compare

BBF Component	IETF Component
Data Requestors (DReqs)	N/A
DC Management Function (DC MF)	YANG-Push Subscription
Managed Entities (MEs)	YANG-Push Publisher
DC Function (DCF)	YANG-Push Receiver YANG Message Broker Producer
Data Delivery Targets (DDTs)	YANG Message Broker Consumer

BBF Interface	IETF Interface
DReq-DCMF	N/A
DCMF-ME	NETCONF, RESTCONF
DCMF-DCF	N/A
DCF-ME	YANG-Push
DCF-DDT	Message Broker / Schema Registry

Discussion Points

What are the key findings

- Do we agree that the 4 highlighted points from slide 4 should be included in the BBF requirements?
- Do we agree that regardless wherever the network data is being polled or pushed the architecture remains the same only the functions move to different systems?

  Remark: Only in case of polling an interface between DC Management Function and DC Function resp. YANG-Push Subscription and YANG-Push Receiver is needed.
- Shall we align terminology between IETF and BBF or describe in each other document how terminology can be mapped on component and interface level?

Discussion Points

What are the possible action points

- Shall we describe in the IETF architecture how the data collection maintains the subscription when network data is being polled on the network node?
- Shall we describe in the IETF architecture how IPFIX and BMP could be accommodated by preserving the architecture principles?
- Shall we include in the IETF architecture the Data Requestor aspect? How a system can interface with YANG-Push Subscription.

Next Steps

How we keep updated

- Do you agree that both operators' requirements and architecture proposals are very similar?
- Do you agree that it is mutually beneficial to align?
- Was this exchange useful and should we meet again in 3 months?