An Architecture for Broadband Network Data Collection

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Reference: https://issues.broadband-forum.org/browse/CONTRIB-24132 baseline text of WT-508

Broadband Network Data Collection(WT-508) Scope

(1) The purpose of broadband network data collection(BNDC) :

- Aim to define the data collection standards for broadband network including architecture, protocols and use cases.

(2) The scope of broadband network data collection(BNDC) includes the following aspects:

- Architectural definition and description of the components of the Data Collection solution.
- Specification of interfaces between the components of the Data Collection solution.
- Consideration of BBF standard data objects, and vendor specific extensions to determine how they best fit in this model with little or no modification.
- Main collection use cases: real-time, on-demand or streaming telemetry, bulk collection, and adaptive DC driven by some predefined strategies
- Transfer protocols as suitable for different collection modes (push, pull, bulk, streaming, pub/sub)
- Specification of data encapsulation mechanism(s)
- Recommendations of preferred open-source tools

(3) The deliverables of broadband network data collection(BNDC) :

- Technical Report, Architecture, Info/Data Model, API specifications &related marketing document or blog & Test Plans

(3) The timeline of broadband network data collection(BNDC) : start from January 2024, estimated finished in 2025.

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Broadband Network Data Collection(WT-508) Architecture Overview

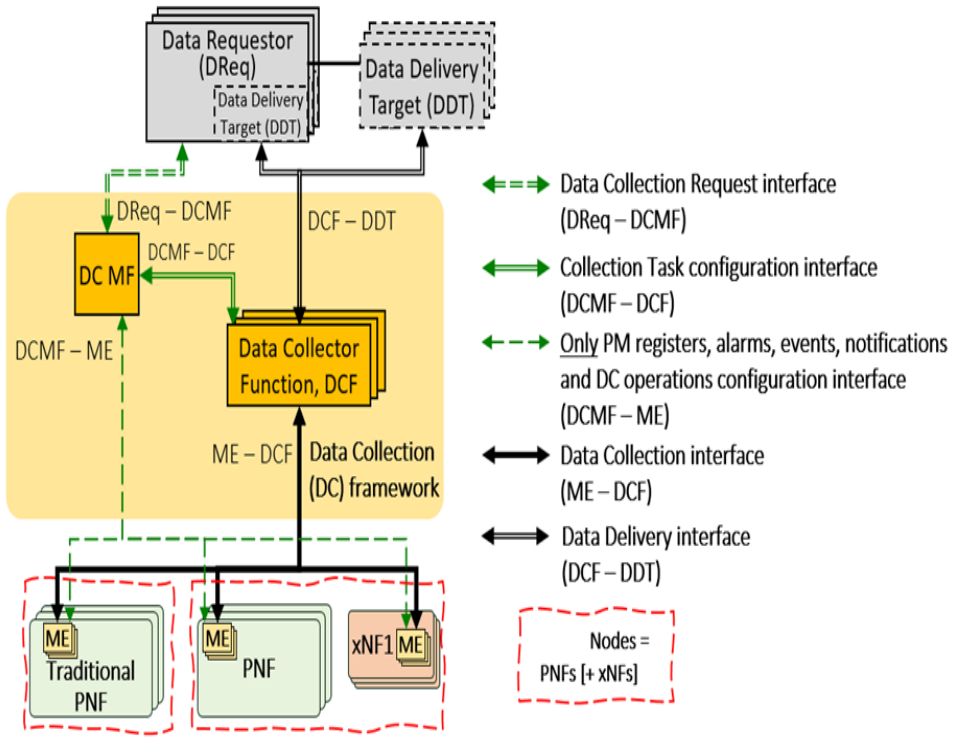

Figure: Data Collection framework architecture of WT-508

	Component Name	Component Description
Components	DC Management Function (DC MF)	Processing and orchestrating incoming DC requests and for managing configuration and communication tasks
	DC Function (DCF)	Retrieving/Receiving data from the southbound network resources, performing transformations on these data, and delivering the data to the target northbound elements
	Data Requestors (DReqs) and Data Delivery Targets (DDTs)	Data requestor and consumers, described below as Data Requestors (DReqs) and Data Delivery Targets (DDTs)
	Managed Entities (MEs)	Managed Entities included in traditional PNF, PNF, and xNF1, which are the various kind of devices running in the network

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Broadband Network Data Collection(WT-508) Interface Overview

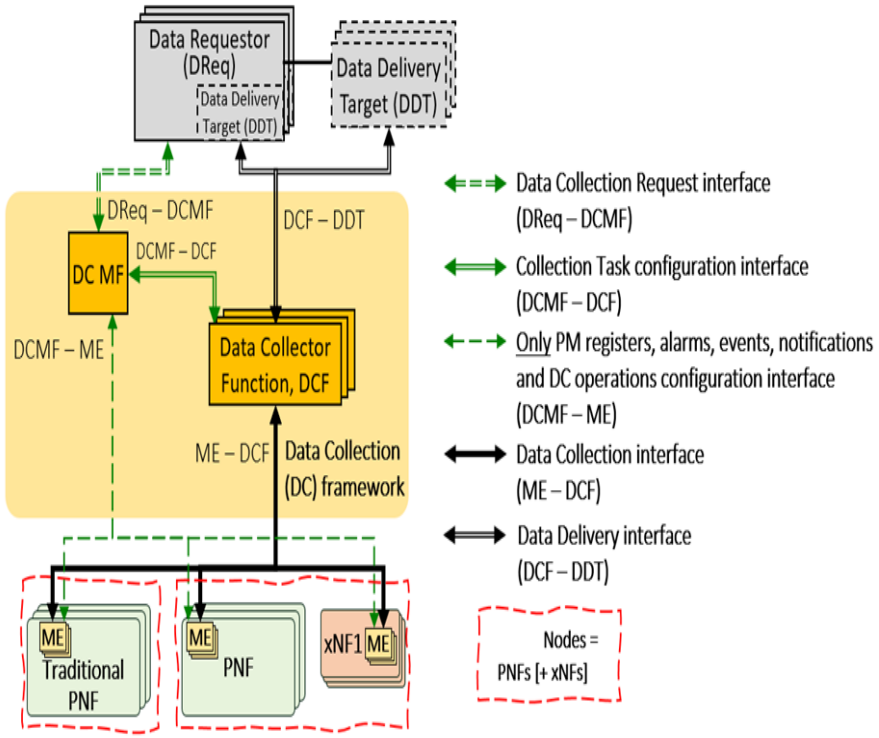

Figure: Data Collection framework architecture of WT-508

	Interface name	Interface Description
Interfaces	DReq-DCMF	Located between DC MF functional component and data requestors, this interface exposes DC framework capabilities in a Network as a Service (NaaS) manner, which receive intent-based data collection requests.
	DCF-DDT	Located between the DCF and DDT component, this interface is designed to deliver collected data to target analysis system or databases, enabling valuable applications
	DCMF-ME	Located between the DC MF and the management entities (MEs) functional component, this interface is used to directly subscribe the data on targeted MEs
	DCF-ME	Located between the DCF and MEs, this interface is used to perform data collection from MEs, which facilitates the collection of data via pull, push, or telemetry modes.
	DCMF-DCF	Located between the DC MF and DCF functional component, this interface is developed to perform the life cycle management of data collections including configuration, management, and orchestration etc.

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