

# DetNet

## DetNet Flow Information Model

draft-farkas-detnet-flow-information-model-02

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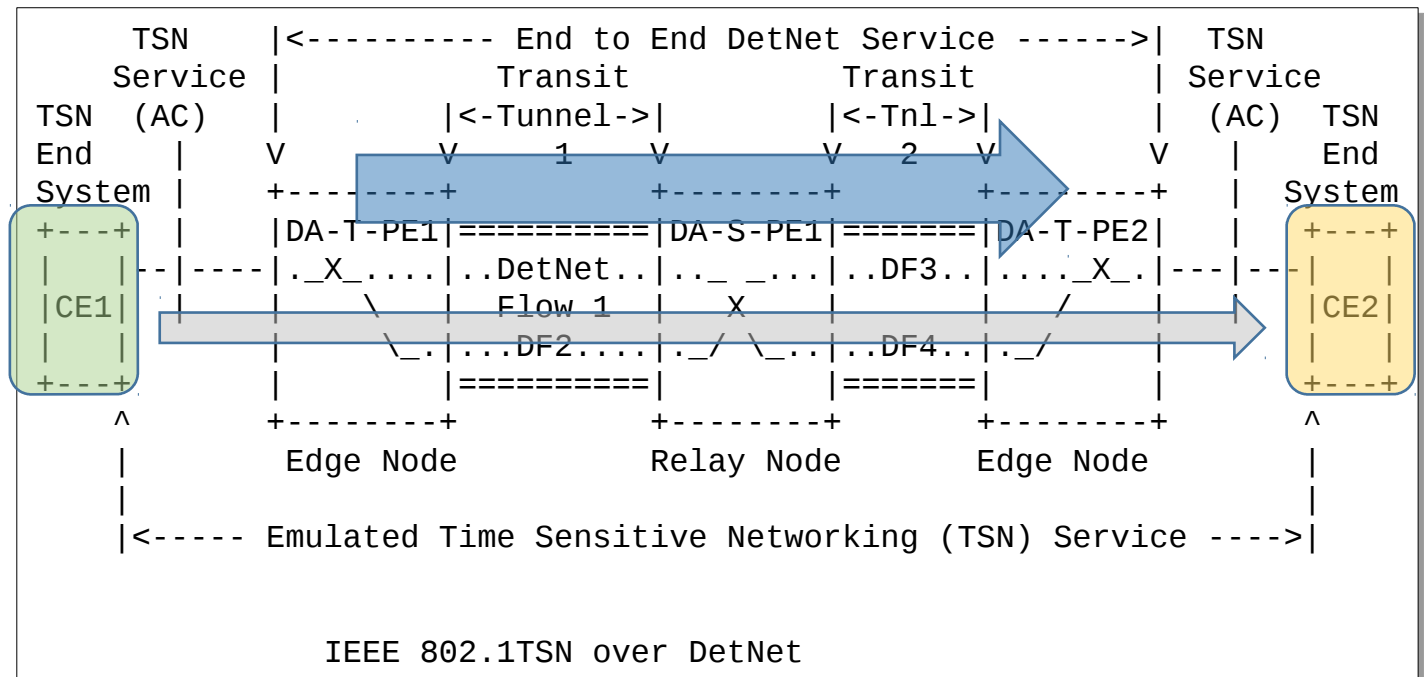
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DetNet WG

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# Content Overview

- Model related discussions
- Updates
- Next steps



# Background

## Service / Flow / Configuration related models

- Discussion on different models (information, data, YANG, etc. )
  - During/after IETF99
- Some IETF definitions
  - RFC3444 - information model
    - The main purpose of an information model is to model managed objects at a conceptual level, independent of any specific implementations or protocols used to transport the data. ... In order to make the overall design as clear as possible, an information model should hide all protocol and implementation details. Another important characteristic of an information model is that it defines relationships between managed objects.
  - RFC3444 - data model
    - Data models, conversely, are defined at a lower level of abstraction and include many details. They are intended for implementers and include protocol-specific constructs.

# Background ... (cont.)

## Service / Flow / Configuration related models

- Some IETF definitions
  - draft-ietf-opsawg-service-model-explained-05 - Service Model:  
A service model is a specific type of data model. It describes a service and the parameters of the service in a portable way that can be used uniformly independent of the equipment and operating environment. The service model may be divided into two categories:
    - Customer Service Model: A customer service model is used to describe a service as offered or delivered to a customer by a network operator. It can be used by a human (via a user interface such as a GUI, web form, or CLI) or by software to configure or request a service, and may equally be consumed by a human (such as via an order fulfillment system) or by a software component. Such models are sometimes referred to simply as "service models" [RFC8049] ... customer service models are technology agnostic so that the customer does not have influence over or knowledge of how the network operator engineers the service.
    - Service Delivery Model: A service delivery model is used by a network operator to define and manage how a service is engineered in the network. It can be used by a human operator (such as via a management station) or by a software tool to instruct network components. The YANG modules that encode such models are sometimes referred to as "network service YANG modules" [RFC8199] and are consumed by "external systems" such as Operations Support System (OSS). A service delivery module is expressed as a core set of parameters that are common across a network type and technology: additional features that are specific to the configuration of individual vendor equipment or proprietary protocols would be defined in extensions or

# Background ... (cont.)

## Service / Flow / Configuration related models

- Some IETF definitions
  - RFC8199 - YANG Modules
    - Network Element YANG Modules:  
describe the configuration, state data, operations, and notifications of specific device-centric technologies or features.
    - Network Service YANG Modules:  
describe the configuration, state data, operations, and notifications of abstract representations of services implemented on one or multiple network elements.
    - Note: Network Service YANG Modules describe the characteristics of a service, as agreed upon with consumers of that service. That is, a service module does not expose the detailed configuration parameters of all participating network elements and features but describes an abstract model that allows instances of the service to be decomposed into instance data according to the Network Element YANG Modules of the participating network elements. The service-to-element decomposition is a separate process; the details depend on how the network operator chooses to realize the service.

# Information/Data models for DetNet

## Service / Flow / Configuration

- DetNet: three models are distinguished:

- Flow information model:

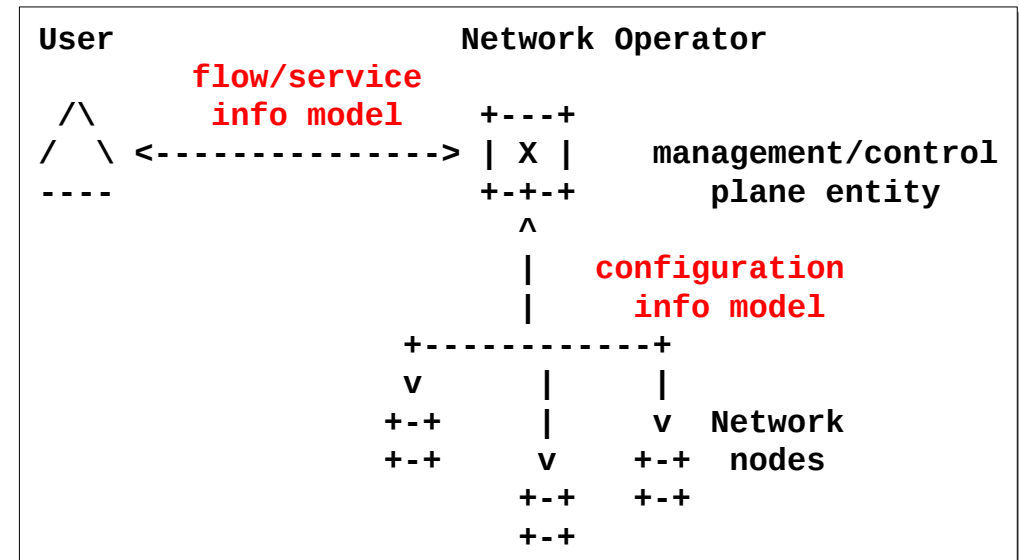
describes characteristics of data flows. It includes in detail all relevant aspects of a flow that are needed to support the flow properly by the network between the source and the destination(s).

- Service information model:

describes characteristics of services being provided for data flows over a network. It can be treated as a network operator independent information model.

- Configuration data model:

describes in detail the settings required on network nodes to serve a data flow properly.



# Information/Data models for DetNet ... (cont.)

## Service / Flow / Configuration

- Service / Flow / Configuration info/data model:
  1. Service / Flow models require a higher level abstraction. They are focusing on how to serv DetNet flows.

DetNet Flow Information Model:

[draft-farkas-detnet-flow-information-model-02](#)

2. Configuration required for e2e service delivery and depends heavily on device capabilities and technology (e.g., IPv6, MPLS, etc.).

DetNet Configuration YANG Model:

[draft-geng-detnet-conf-yang-00](#)

Note: concerns on configuration, e.g., we are not yet there to know in detail all the configuration for DetNet scenarios (e.g., L2/L3 QoS, TSN sub-net with DetNet domain, Signaling, etc.).

# Update:

## Flow and Service specific attributes

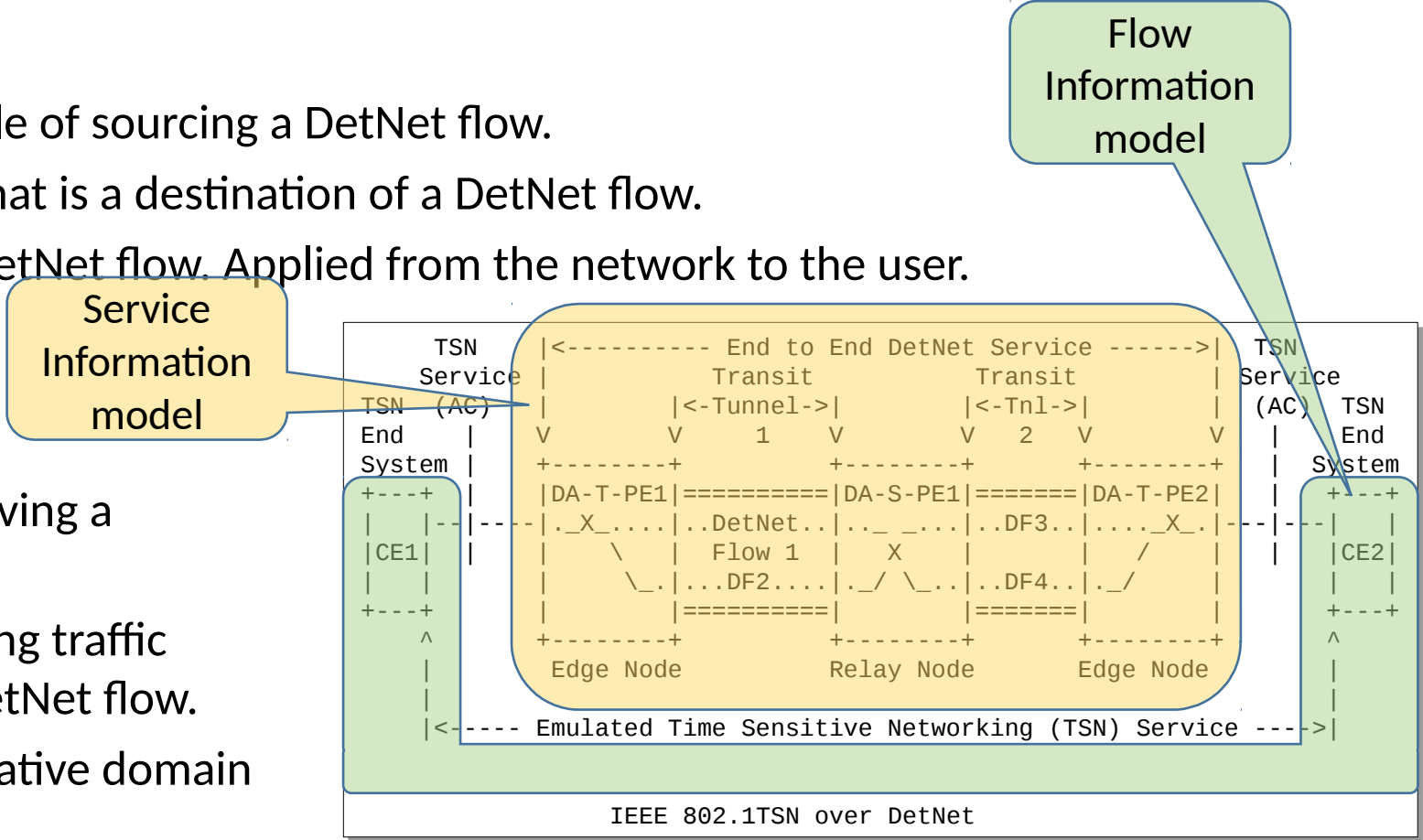
- Flow information model

- Source: an end system capable of sourcing a DetNet flow.
- Destination: an end system that is a destination of a DetNet flow.
- Flow-status: the status of a DetNet flow. Applied from the network to the user.

- Service information model

- Ingress: an edge system receiving a DetNet flow from a Source.
- Egress: an edge system sending traffic towards a Destination of a DetNet flow.
- DetNet domain: an administrative domain providing the DetNet service.

- Service-status: the status of a DetNet service. Applied from the network to the user.





# Next steps

- Sort out the details of flow and service specific attributes
- Fill up new sections accordingly