

IETF106報告会

5G/SRv6関連

- NSDT
- DMM

KDDI株式会社 丹羽朝信

Tomorrow, Together おもしろいほうの未来へ。



- Network Slicing Design Team (TEAS WGのサブグループ)
- 2019年9月に発足
- IETF(のTE)技術を用いて、Network Slicingを実現するためのフレームワークを検討し、(必要あれば)既存仕様の改善案を提案する

6.5. Design teams

It is often useful, and perhaps inevitable, for a **sub-group of a working group to develop a proposal to solve a particular problem**. Such a sub-group is called a design team. In order for a design team to remain small and agile, it is acceptable to have closed membership and private meetings. Design teams may range from an informal chat between people in a hallway to a formal set of expert volunteers that the WG chair or AD appoints to attack a controversial problem. **The output of a design team is always subject to approval, rejection or modification by the WG as a whole.**

<https://ietf.org/about/groups/iesg/statements/design-teams/>

Network Slicingとは？(1/2)

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- 5Gで期待されている技術(コンセプト)の一つ
- サービス要件(低遅延等)に応じた“面”を柔軟/動的に構築すること

A network slice is a (set of) element(s) of the network specialised in the provisioning of a certain (type of) service(s).
- 3GPP TR 21.915: Summary of Rel-15 Work Items -

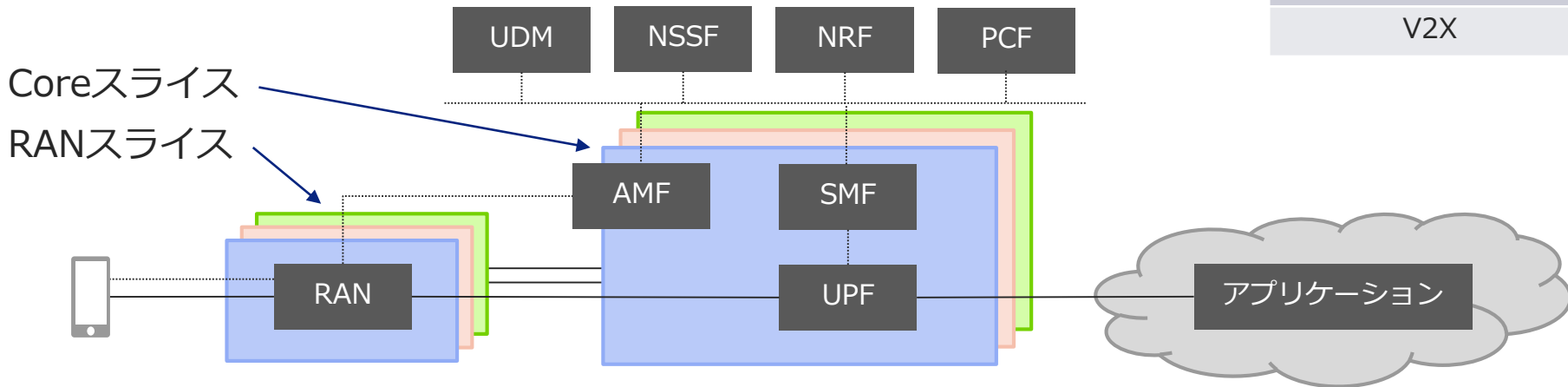
Slice/Service Type

eMBB

URLLC

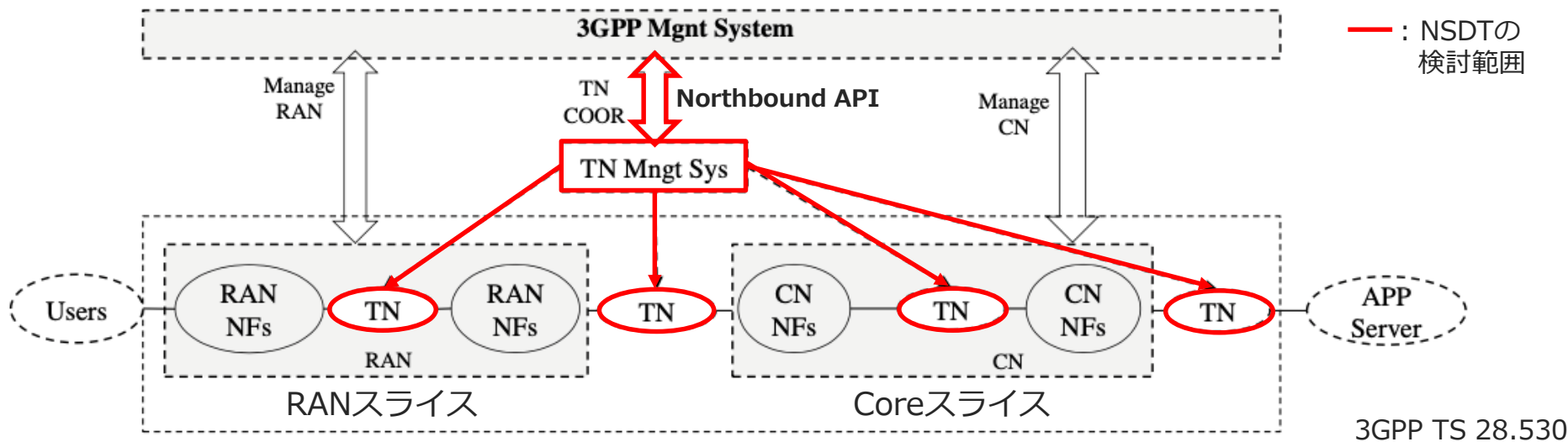
MIoT

V2X

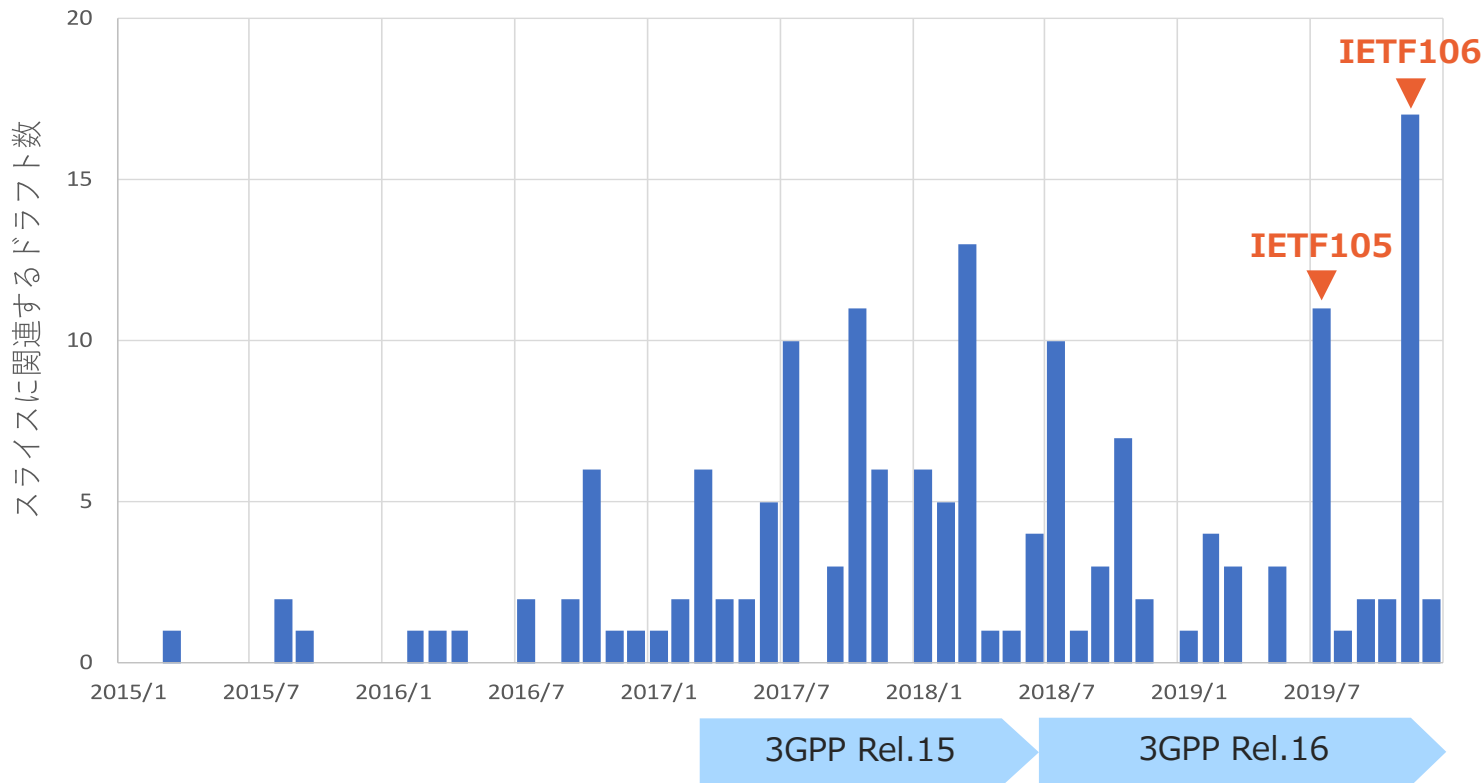


Network Slicingとは？(2/2)

- 各ドメインのスライスを横断して、1つのスライスを構築することを End-to-End スライスと呼ぶ
- non-3GPP parts(データセンタNW、トランスポートNW)との連携が必要



スライス関連のドラフト数推移



(注意) TitleとAbstractに「slice/slicing」のワードが含まれるドラフト。本内容のスライスと関係ないドラフトも含まれる

■ IETF105以前



■ IETF105 TEAS WG



Chair

スライスに興味があるメンバを集めて、TEASにおける
スライスの方向性を検討していくのがいいのでは

■ TEAS WG Chairs (2019.9.4)

● NSDTメンバの募集

As discussed in Montreal **we are forming a design team to help bring focus to the many discussions we have been having on Network Slicing**. The draft objectives and deliverables for the design team are outlined below. At this time we'd like to ask for comments on this draft -- to be sent to the WG list. **We would also like to ask any who are interested in participating in the design team** to send the WG chairs (cc'ed above) a brief note expressing your interest, affiliation and relevant expertise. Please do so within one week. We expect the announcement of the DT formation and membership one week after that.

While we appreciate your interest and willingness to contribute, please be aware that not all who volunteer will be included in the team. All will be able to participate in this work once we have a WG document on the topic and, as always, the document progress through normal WG processing. -- We do note that the objective of the DT is to produce an initial draft and there is no requirement for the authorship to be limited to or include all DT members, and as usual, we expect a WG document to reflect actual contribution to the work.

Thank you,
WG Chairs: Pavan, Lou

■ TEAS WG Chairs (2019.9.19)

● NSDTの発足

This message **announces the formation of the TEAS Network Slicing Design Team**. The objectives and deliverables for the design team have been updated based on public and private feedback and is enclosed. There are changes from what was previously announced in (https://mailarchive.ietf.org/arch/msg/teas/H3azyFI3kIaZDhwxwEcSK1_O2CRA), notably calling out scope as being focused on TE technology as the basis for the DT's work.

We thank all who expressed interest and willingness to join the design team. As we're sure all will understand, it was not possible to include all who volunteered in the team. The aim of the DT remains to produce documents that will follow the normal working process, so all will be able to participate in and contribute to this work once we have a WG document as it progresses through normal WG processing. We do note that the objective of the DT is to produce an initial draft and there is no requirement for document authorship to be limited to or include all DT members, and as usual, we expect a WG document to reflect actual contribution to the work.

Thank you,
WG Chairs: Pavan, Lou
DT Lead: Jari Arkko

【IETF106】 NSDTのレポート(1/2)

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- NSDTが発足してから最初の会合。何をどう進めるか、をWG内に共有
- ネガティブなフィードバックはなく、以下の方針で進む予定

Design Team Timeline & Status

IETF 106

Plans

Scope

Early individual contributions (e.g., definitions)

IETF 107

- Initial framework draft from the design team

IETF 108

- Stable draft from the design team

Design Team Scope & Plan

”Back to basics” – explain how to use existing IETF transport technologies:

- Definitions of transport connections or slices ← 今は主にココ
- Framework that describes the overall system, and its requirements
- Employ existing IETF TE tech for the necessary components and interfaces
 - Or extend as needed
 - A northbound interface for requesting connections with specific characteristics
 - How to map northbound requests to underlying IETF tech(s)
 - Underlying IETF tech, e.g., IP, MPLS, GMPLS, VPNs, etc
- Provide some use cases (as examples)

The design team plan is to publish documents on the above topics

Frameworkに着手開始

■ やらないこと

Design Team Scope

But note also:

- Not an overall definition of all virtualization or all network functions (but can be used as a component in one) ← 特定のエンドポイント (CU/DU/UPF)に特化しない
- Not our role to define 5G slicing (even if they may use our results) ← 5Gスライスに特化しない
- Not overtaking any other SDO's roles, but rather working together
- Not about picking any single implementation technology ← (まずは)特定のスライス実装技術に特化しない
例) VPN+, FlexE、DetNetなど
- Might be just better definition & explanation of existing tech
 - Extensions for underlying protocols and encaps not needed initially
 - It is possible that extensions prove useful later (but to be developed by relevant WGs)

■ 5G U-Plane Analysis

- 3GPPが定める5GCのU-PlaneについてIETFの視点で分析を行い、U-Plane Protocolに対する要求事項・評価軸を整理するドラフト
- 3GPP Rel16をもって本ドラフトの更新を終了し、WG Last Call (Information draft)を目指すことについて議論を実施
 - ・ 明確なコンセンサスは取られていないが、否定的な意見は無かった
 - ・ 3GPP Rel-16終了→ドラフト更新→WG Review & WG LCという流れ。URLLCなどが追加される見込み

DMM Working Group
Internet-Draft
Intended status: Informational
Expires: May 7, 2020

S. Homma
NTT
T. Miyasaka
KDDI Research
S. Matsushima
SoftBank
D. Voyer
Bell Canada
November 4, 2019

User Plane Protocol and Architectural Analysis on 3GPP 5G System
draft-ietf-dmm-5g-uplane-analysis-03

Abstract

This document analyzes the mobile user plane protocol and the architecture specified in 3GPP 5G documents. The analysis work is to clarify those specifications, extract protocol and architectural requirements and derive evaluation aspects for user plane protocols on IETF side. This work is corresponding to the User Plane Protocol Study work on 3GPP side.

5G U-Plane Analysis

■ User Plane Message Encoding

- GTP-U OAM MessageをSRv6で通知するために、SRHのTag/TLVを利用する提案

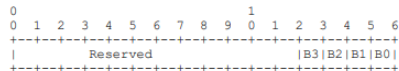


Figure 2: Tag Field Encoding

Bit 0 [B0]: End Marker
Bit 1 [B1]: Error Indication
Bit 2 [B2]: Echo Request
Bit 3 [B3]: Echo Reply

User Plane Message Encoding : SRH Tag

■ NSDT

- Network Slicing Design Teamが発足
- トランスポートスライスの定義やフレームワークを検討中
- IETF108でのStableが目標

■ DMM

- 5G U-Plane Analysisのドラフトは、3GPP Rel.16をもってWG LCを目指す

Tomorrow, Together



おもしろいほうの未来へ。

