



OVERVIEW AND UPDATES · CONNECTED MEDIA PRODUCTION

Time-Sensitive Communications (TSC)

Deterministic, low-jitter transport for tightly synchronised professional media

3GPP

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About the project

The 5G system as a bridge between wired Time-Sensitive Networking segments

TS 23.501

3GPP system architecture

The 5G system modelled as a TSN bridge, NW-TT and DS-TT, and time synchronisation.

TS 23.502

3GPP procedures

The procedures of Time-Sensitive Communications.

TS 29.565

3GPP stage 3

The services of the Time Sensitive Communication and Time Synchronization Function (TSCTSF). IEEE 802.1 TSN standards are referred to throughout.

FIND OUT MORE

Technical Analysis

Specifications

Control plane

How 5G carries deterministic traffic and shared timing between wired TSN segments

AT THE UPF

NW-TT

The Network-side TSN Translator at the UPF. It terminates the wired TSN network and holds the bridge management information.

IN THE 5G CORE

TSCTSF

The network function through which deterministic QoS and time synchronisation are requested. An AF outside the trust domain reaches it through the NEF.

IN THE TSN NETWORK

TSN CNC

Computes schedules across the 5G bridge with ordinary TSN tooling; the 5G system reports its bridge capabilities to it.

The 5G system is modelled as one or more virtual TSN bridges, so wired TSN tooling can schedule across the wireless hop.

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Specifications in scope

The standards that 5G TSC interworks with and the media workflow it carries

3GPP service requirements and system architecture

TS 22.104

TR 22.804

TS 23.501

TS 23.502

TR 23.700-25

TS 29.565

TS 29.522

IEEE TSN Time-Sensitive Networking

802.1AS timing and synchronisation

802.1Q bridges

802.1BA Audio Video Bridging

802.1CB frame replication

SMPTE IP media production

ST 2110-10 timing

ST 2110-20 video

ST 2110-21 traffic shaping

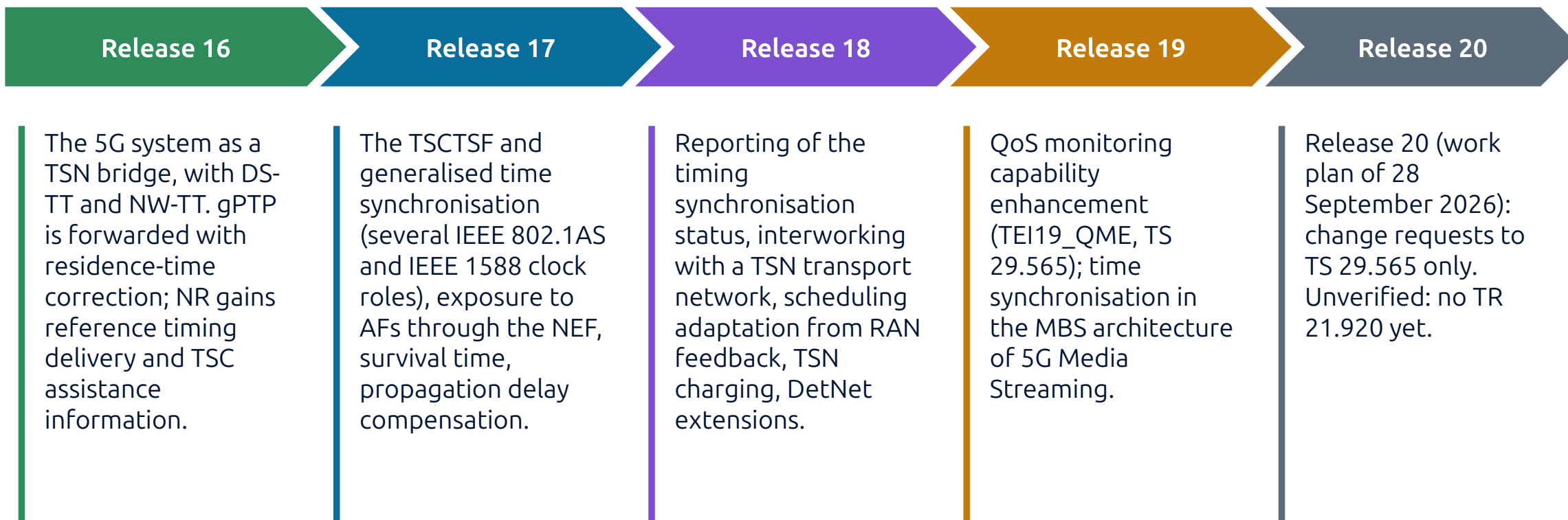
ST 2110-30 audio

ST 2110-40 ancillary data

TSC in a media context usually runs over a private 5G deployment, so it builds on Non-Public Networks.

How it grew

What each 3GPP release added to Time-Sensitive Communications





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