



# MediaTek Rel-16 Priorities

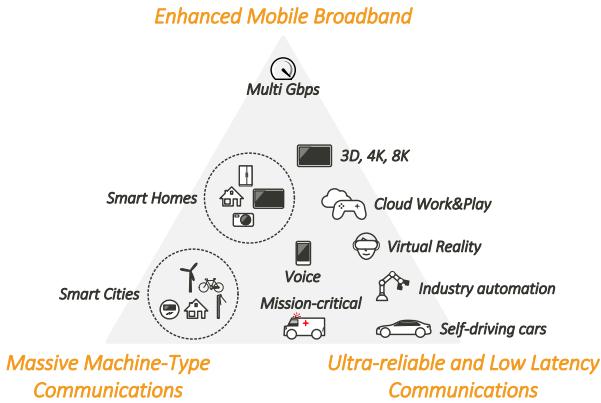
## System Aspects

# Outline

- Key directions
- Priorities
- Way forward – proposal for SA#80 handling
- Cross-TSG harmonization

# Key Directions

Rel-15 – 3GPP foundation for IMT2020



Technology enablers for IMT2020

eMBB focus, URLLC enablers, IoT LPWA leverage (EPS), V2X

Rel-16 – Improve, while leveraging, Rel-15



“Service”-driven  
enablers and enhancements

URLLC, IoT, Verticals, eMBB enh.



Overall  
efficiency improvements

System-wide enhancements from AS to NAS

# MediaTek Priorities

## High

FS_5G_CIoT	Efficient support of 3GPP CIoT LPWA in 5GS. Enable full IMT2020 support in 5GS
FS_5G_URLLC	New markets and new services. Enable full IMT2020 support in 5GS
<FS UE Capability>	Overall efficiency, harmonization and TTM

## Neutral

FS_ETSUN	<i>Important NW arch. item</i>
FS_eSBA	<i>Important NW arch. item</i>
FS_eNS (3)	
FS_5WWC	
FS_ATSSS	
FS_ENTRADE	<i>UE impact to be avoided</i>
FS_LLC_Mob (EPS)	
FS_PARLOS (EPS)	
<Flexible LADN>	<i>Must leverage Rel-15 LADN</i>
<Satellites>	

## Mid

FS_eV2XARC	5GS (and NR) to provide support for all V2X requirements
FS_eLCS	Enable full LCS support in 5GS (i.e. beyond emergency location)
<Verticals>	New markets and new services
FS_5G_SRVCC	Voice service continuity in NR areas without E-UTRA/VoLTE underlay
FS_eIMS5G	Optimized integration of IMS with 5GS

NOTE 1: The above <items> are under discussion and pending TSG SA approval at the time of writing

NOTE 2: EPS/5GS Feature parity is not considered as a default assumption but needs to be addressed on a case-by-case basis

# Way forward

## Proposal for handling of prioritized/de-prioritized items

- New proposed study items are subject to normal approval at SA#80
- The list of prioritized is documented clearly at SA#80
- Prioritization is a white list
  - All study items prioritized at SA#80 are expected to be finalized in 2018, acc. to their completion dates
  - Any continuation of a study into a feature for Rel-16 will be subject to normal working procedures i.e. WI approval in due course (e.g. SA#82/Dec 2018)
  - All (de-facto) de-prioritized items are put on hold at least through 2H'2018
  - Each de-prioritized item may be re-started, subject to TSG SA approval and according to SA2 capacity
  - A de-prioritized item may only be re-started at the earliest at TSG SA#82/Dec 2018
- No new (i.e. unknown at SA#80) Rel-16 items to be accommodated after SA#80

# **Cross-TSG harmonization**

## Coherence and timely finalization

# Cross-TSG harmonization

- Need to ensure a coherent system-wide evolution in Rel-16
  - Avoid orphan features i.e. AS (resp. NAS) features lacking NAS (resp. AS) enablers in the same release
- The next few slides provide an analysis of the current proposals in RAN (email discussions) and SA2
  - Observation: no fundamental contradiction between ongoing RAN and SA2 discussions however some items need clarification (see next slide ▲ )
- Other: alignment work
  - AS (resp. NAS) impacts might not always be envisaged at the inception of a new NAS (resp. AS) feature
    - however it is important that these impacts be identified as soon as possible to avoid detrimental impact on feature completion
  - Proposal:
    - NAS (resp. AS) impacts from a new AS (resp. NAS) proposal should be indicated at SA#82/Dec 2018 at the latest

# Ongoing RAN discussions [1/2]

## Ongoing WI (SI)

	Topic	TDoc	System-wide impact [To be confirmed by RAN]	Link to ongoing/new Rel-16 Stage 2 SI/WI
Ongoing WI	NR NOMA	<a href="#">RP-171043</a>	No	N/A
	NR Unlicensed ▲	<a href="#">RP-180229</a>	Yes – "USOS-like" <sup>(2)</sup>	No corresponding SI/WI however simple alignment based on EPS USOS should be possible
	NR NTN <sup>(1)</sup>	<a href="#">RP-171450</a>	No (only channel modelling and deployment scenarios)	N/A
	V2X evaluation <sup>(2)</sup>	<a href="#">RP-171093</a>	No	N/A
	NR IAB	<a href="#">RP-172290</a>	Unknown	N/A

NOTE 1: Channel models and deployment scenarios. NTN = non-terrestrial networks i.e. Satellite

NOTE 2: USOS ([SP-160117](#)) – enabling accounting of unlicensed spectrum use (WiFi, LTE) for charging and network planning purpose

NOTE 3: Evaluation methodology for new V2X *use cases* for NR and LTE

# Ongoing RAN discussions [2/2]

## Moderated email discussions (No approved WI/SI yet)

	Topic	TDoc	System-wide impact [To be confirmed by RAN]	Link to ongoing/new Rel-16 Stage 2 SI/WI
Ongoing email discussions (NR)	NR Vo/Vi/TCP	<a href="#">RP-180397</a>	No	N/A – potential alignment work
	NR Low Power	<a href="#">RP-180229</a>	Unknown	N/A – potential alignment work
	NR MIMO	<a href="#">RP-180578</a>	No	N/A
	IoT/MTC	<a href="#">RP-180581</a>	Potential	FS_CIoT_5G
	NR URLLC	<a href="#">RP-180432</a>	Potential	FS_5G_URLLC
	NR Mobility	<a href="#">RP-172515, 2564, 2325, 2414</a>	Unknown (RAN Internal mobility)	N/A
	NR Positioning	<a href="#">RP-180319</a>	Yes	FS_eLCS
	NR V2X	<a href="#">RP-180426</a>	Yes	FS_eV2XARC
	B/Mcast	<a href="#">RP-180499</a>	Yes	Proposed SA2 SI ? ( <i>not seen again at SA2#127bis</i> )
	NR Flexible duplex	<a href="#">RP-180323</a>	No	N/A
	Others		<i>Discussions have not started</i>	TBC
	NR spectr. utiliz.	<a href="#">RP-180380</a>	No	N/A
	NR >52.6GHz	<a href="#">RP-180320</a>	No	N/A
	FS 6-24GHz	<a href="#">RP-180455</a>	No	N/A
	NR coverage eval	<a href="#">RP-180220</a>	No	N/A
	FS NR NTN	<a href="#">RP-180182</a>	Yes	Proposed SA2 SI
	NR remote interf.	<a href="#">RP-180311</a>	No	N/A
	MDT, SON etc.	<a href="#">RP-180462</a>	No	N/A
LTE	LTE Enh. <sup>(1)</sup>	<a href="#">RP-180223, 363, 369, 222, 238, 375, 436</a>	TBC	TBC

NOTE 1: Other than IoT, MIMO, Broadcast

# SA2-led studies – Rel-16

## Ongoing and new proposals

	WI	TDoc	Title	RAN Impact	Link to ongoing Rel-16 RAN discussion
Ongoing SI	FS_eNA	▲ <a href="#">SP-170383</a>	Study of enablers for Network Automation for 5G	NG-RAN	No corresponding RAN discussion
	FS_CIoT_5G	<a href="#">SP-170801</a>	Study on Cellular IoT support and evolution for the 5G System	NG-RAN	Yes – IoT/MTC
	FS_ATSSS	▲ <a href="#">SP-170411</a>	Study on Access Traffic Steering, Switch and Splitting support in the 5G system architecture	NG-RAN + N3IWF	No corresponding RAN discussion
	FS_ENTRADE	<a href="#">SP-170934</a>	Study on encrypted traffic detection and verification	No	N/A
	FS_5WWC	▲ <a href="#">SP-170380</a>	Study on the Wireless and Wireline Convergence for the 5G system architecture	Unknown (RAN3?)	No corresponding RAN discussion
	FS_eV2XARC	<a href="#">SP-170590</a>	Study on architecture enhancements for 3GPP support of advanced V2X services	E-UTRAN, NG-RAN	Yes – V2X
	FS_eLCS	<a href="#">SP-170937</a>	Study on Enhancement to the 5GC Location Services	NG-RAN	Yes – Positioning
	FS_eIMS5G	<a href="#">SP-171052</a>	Study on Enhanced IMS to 5GC Integration	No	N/A
	FS_LLC_Mob	<a href="#">SP-171069</a>	Study on EPC support for Mobility with Low Latency Communication	E-UTRAN?	TBC – LTE enh.?
	FS_ETSUN	<a href="#">SP-170743</a>	Study on Enhancing Topology of SMF and UPF in 5G Networks	No	N/A
	FS_PARLOS	<a href="#">SP-170382</a>	Study on Stage 2 for PARLOS (NOTE: EPS related)	Unknown	N/A
	FS_5G_SRVCC	▲ <a href="#">SP-180120</a>	Study for single radio voice continuity from 5GS to 3G	NG-RAN	None
	FS_eSBA	<a href="#">SP-180117</a>	Study on Enhancements to the Service-Based 5G System Architecture	Unknown	Not necessary
	FS_eNS	<a href="#">SP-180121</a>	Study on Enhancement of Network Slicing	Unknown	Not necessary
	FS_5G_URLLC	<a href="#">SP-180118</a>	Study on enhancement of URLLC supporting in 5GC	Unknown	TBC: URLLC?
	FS_EPS_URACE	<a href="#">SP-180119</a>	Study on enhancement of systems using EPS for Ultra Reliability and Availability using commodity equipment	E-UTRAN	TBC – LTE enh.?
	FS_AAI_LTE_NR	<a href="#">SP-180122</a>	Study on Application Awareness Interworking between LTE and NR	Unknown	Not necessary

# SA2-led studies – Rel-16

## Ongoing and new proposals

	WI	TDoc	Title	RAN Impact	Link to ongoing Rel-16 RAN discussion
Proposed SI	<TBD>	<a href="#">S2-185519</a>	Study on Architecture aspects of using satellite access in 5G	"NG-RAN + N3IWF" [?]	Yes – NTN
	<TBD>	<a href="#">S2-184505</a>	Study on 5G Multicast / Broadcast Service	NG-RAN	Yes – B/Mcast
	<TBD>	<a href="#">S2-185520</a>	Study on Support of flexible LADN	Unknown	N/A
	<TBD>	<a href="#">S2-185521</a>	Study on Enhanced support of Vertical and LAN Services	Unknown	N/A
	<TBD>	<a href="#">S2-185522</a>	Study on System architecture for next generation real time communication service	No	N/A
	<TBD>	<a href="#">S2-185524</a>	Study on optimisations on UE radio capability signalling	Yes	Not per se however been discussed in RAN2

# Thank You!