Considerations for Release 12 Priorities & the Way forward

3GPP SA#61

Porto Portugal
9 -11 September 2013

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The Release 12 Status and Challenges

- Release 12 workshop in SA#58 (ref: SP-120932) has identified the subjects as high priority in SA2 incl.
    - Group Communications (GCSE_LTE) for Public Safety and Critical Communications.
    - Proximity based Services (ProSe) including both Public Safety and Commercial aspects
    - UE Power Consumption (MTCe_UEPCOP), Small Data and Device Triggering (MTCe_SDDTE)
    - Network Selection aspects (WLAN_NS)
    - S2a Mobility with GTP for WLAN (FS_SaMOG, eSaMOG)
    - Optimized Offloading to WLAN in 3GPP-RAT mobility (FS_WORM, WORM)
    - User Plane Congestion (UPCON), Core Network Overload (FS_CNO, CNO_ULI_OPT)
    - IMS (RegCon, WebRTC etc), PCC/QoS (P4C_F,) etc.
    Significance progress has been achieved in SA2 since January

- Time required to complete the remaining work far exceeds the available sessions in the whole 2014 !

- Actions must be taken now without seriously compromising or delaying the planned R12 completion. Assessment of minimum set of R12 features/functions vs. resource availability is essential !

The Key Considerations for R12 Prioritization

- Keep those items of strategic significance to the mobile industry/operators incl. those high priority items;
  - Release 12 workshop conclusion represents a good balance between different sectors and regions of the mobile industry .

- Those low hanging fruits/smaller items should be given enough time to complete in R12

  - Lots of hard work and effort has been given and most of them are close to completion or requires non-significant resources, and they are of high imminent and/or strategic importance and values to operators.

- Dependencies with stage 3, in particular, on the current status and the complexity vs the serious overload in the relevant RAN WG's must be taken into account.

- Focus on those big items which require significant amount of time (ref: SP-130334, SA2 chair's Prioritisation Inputs to SA#61)
  - Proximity based Services
  - Group Communication Enabler for LTE
  - User Plane Congestion Management

The Assessment Considerations of the "Big Three"

- Reduce the current scope of the big three items in following principles

    - Keep the most essential functions, without which no practically meaningful deployment is possible.

    - The (essential) functions with least or little impact and dependencies on the relevant RAN WG's are prioritised over those which have high level of dependencies on the progress and require significant amount of resources in the RAN WG's.

    - The functions related to the imminent regulatory or the governments' requirements and have significant impact on operators' deployment are prioritised over those of possible business potentials.

    - The continuation and further enhancement in post R12 should always be considered, e.g. with an agreement in SA to include some of "non-R12" functions in Release 13.

ProSe Communication Functions for R12* & Post R12

ProSe Components (ref:SP-130335/RP-131377)	Time budget estimate	Rel-12	Post Rel-12	Notes
A) Direct 1:1 E-UTRA Comm., out of coverage	2TR, 1TS (RAN/SA3 Dep.)	Yes	-	
B) Direct 1:many E-UTRA Comm., out of coverage	2TR, 1TS (RAN/SA3 Dep.)	Yes	-	RAN#61: priority 1
C) Direct 1:1 E-UTRA Comm., in coverage	3TR, 1.5TS (RAN/SA3 Dep.)	-	Yes	
D) Direct 1:many E-UTRA Comm. in coverage	3TR, 1.5TS(RAN/SA3 Dep.)	Yes ?	Yes	RAN#61:priority 2
E) ProSe Comm Path via eNB	4TR, 1TS(RAN/SA3 Dep.)	-	Yes	
F) ProSe Assisted WLAN Direct	2TR, 1TS(RAN/SA3 Dep.)	-	Yes	
G) UE to UE Relay	4TR, 2TS (RAN/SA3 Dep.)	Yes (?)	Yes	Depending on the progress in stage 3, some limited functions may be defined in R12.
H) UE to NW Relay	4TR, 2TS (RAN/SA3 GCSE_LTE Dep.)	Yes ?	Yes	RAN#61: priority 3
I) Service Continuity	+3TR, +1TS (RAN Dep.)	-	Yes	

- Functions related to other services are not included but may need to considered following the proposed principles including the dependency on the relevant progress and feasibility in RAN.

GCSE_LTE Functions for R12 & Post R12

GCSE_LTE components (ref: SP-130335/RP-131377)	Time budget estimate	Rel-12	Post Rel-12	Notes
A) Group Management	2TR, 0.5TS (SA3 Dep.)	Yes	-	RAN#61: priority 1
B) Group Communication	<4TR, 1TS (RAN/SA3/ProSe Dep.)	Yes	~	RAN#61: priority 1
C) Geographic Scope	2TR, 1TS (RAN/SA3/ProSe Dep.)	-	Yes	
D) Floor Control	2TR, 0.5TS	-	Yes	
E) User Interaction	0.5TR, 0.5TS	Yes	-	RAN#61: priority 1
F) Service Continuity	4TR, 2TS (RAN/SA3/ProSe Dep.)	Yes	-	RAN#61: priority 1
G) UE to Network Relay	3TR, 2TS (RAN/SA3/ProSe Dep.)	-	Yes	
H) Resource Efficiency	1TR, 1TS (RAN/SA3/ProSe Dep.)	Yes	Yes	RAN#61: priority 1
I) Roaming Scenarios	3TR, 1.5TS (RAN/SA3/ProSe Dep.)	-	Yes	Not requires at all
J) High Availability	Stage 3	-	Yes	
K) Interworking (with non-3GPP networks)	>2TR, > 0TS	-	Yes	
L) UE-AS Open Interface	2TR, 0TS	~	Yes	The basic functions in R12
(ext3) SA3/Security Aspects	0.5TR, 0TS	Yes		The essential functions in R12

UPCON Functions for R12 &Post R12

UPCON feature component (ref: SP-130335)	Time budget estimate	Rel-12	Post Rel-12	Notes
A) RAN Traffic Differentiation	3TR, 2TS (RAN Dep.)	Yes	-	
B) Uplink Congestion Management	2TR, 2TS (RAN Dep.)	-	Yes	- Differentiation between UEs already supported. -Differentiation between applications of the same UE is UE specific
C) RAN Congestion Detection	1TR, 1TS (RAN Dep.)	Yes	-	
D) RAN Congestion Reporting (including what info eNB to be sent to CN and how to sent them to CN)	4TR, 1TS	Yes	-	
E) Dynamic Policy Control	0.5TR, 0.5TS	Yes	-	
F) CN Congestion Mitigation with dynamic PCC control, per subscriber policies	1TR, 0.5TS	Yes	-	
G) Content specific UP prioritization (Video)	4TR, 1TS (RAN Dep.)	Yes	-	-Video traffic is the major cause of congestion. - Less time budget could be sufficient
H) App specific UP prioritization	2TR, 1TS (RAN Dep.)	-	Yes	
I) Un/Attended UE Information	1TR, 0.5TS (RAN Dep.)	-	Yes	Not essential at all

The Smaller Items for R12 & Post R12

The Stage 2 Features (ref: SP-130334)	Time budget estimate	Rel-12	Post Rel-12	Notes
Core Network Overload Solutions (CNO_CLI)	2.5TR, 1TS	Yes	-	
S2a Mobility based on GTP and WLAN Access to EPC (SaMOG)	0TR, 4TS	Yes	-	
WLAN Network Selection for 3GPP Terminals (WLAN_NS)	0TR, 4TS	Yes	-	
Policy and Charging Control for supporting fixed broadband access networks(P4C_F)	1TR, 3TS	Yes	-	
Optimized Offloading to WLAN in 3GPP-RAT Mobility (WORM)	2TR, 1TS	Yes	-	
Network Provided Location Information for IMS (TWAN case) (NETLOC_TWAN)	0TR, 1TS	Yes	-	
Small Data and Device Triggering Enhancements (SDDTE)	4TR, 1TS (RAN Dep.)	Yes	-	Only the solution without RAN impact.
UE Power Consumptions Optimizations (UEPCOP)	2TR, 1TS (RAN Dep.)	Yes	-	
The IMS Features	3.5TR, 3TS	Yes	-	Not affected by SA2 budget constraints

Summary

- The estimated R12 time budgets required for R12 Priority Features/Functions

    - The "Big Tree": < 36.5TR, 18.5TS
    - The Smaller Items: < 11.5 TR, 16TS
    - IMS: 3.5TR, 3TS
    - The total: < 51.5TR, 37.5TS

- The SA2 Time Budgets:

    - The approved total time budgets: 32 (3GPP Packet Access) and 31.5 (PCC/QoS,…)
    - For 3GPP Packet Access items in 2014: Q1 = 21; (Q2….
    - For PCC/QoS, IMS and Non-3GPP Access items in 2014: Q1=15, (Q2:…
    - The total time budgets until Q1 2014: ~ 100

- Allowing for some exceptions by March 2014, the available SA2 budgets until Q1'14 are JUST enough* to cover the proposed high priority items/functions within the R12 time plan !

 * exceptions/extra sessions must be considered for RAN/SA3 and other Stage 3 dependency