**3GPP TSG RAN meeting #96 RP-221064**

**Budapest, Hungary, June 06-09, 2022**

## Status Report to TSG

**Agenda item:** 9.3.1.5

|  |  |
| --- | --- |
| **WI / SI Name** |  |
| included in this status report | Study Item: No | Core part: Yes | Performance part:Yes | Testing part:No |
| **Acronym** | NR\_SL\_enh2 |
| **Unique ID** | 940097 |
| **TSG Tdoc of latest approved WI/SI description (if any)** | RP-220300 |
| **Target Completion Date****(indicate if changed)** | Study Item: mm/yyyy | Core part: 12/2023 | Performance part: 06/2024 | Testing part: mm/yyyy |
| **Overall Completion level** | Study Item: xx % | Core part: 7% | Performance Part: 0% | Testing part: xx % |

Note: Overall completion level percentage numbers should use one of the colors below:

* xx%: Normal progress, no RAN plenary action needed
* xx%: Progress behind schedule, may need RAN plenary intervention. If so, SR should clearly define requested action
* xx%: Progress critically behind, RAN plenary shall intervene. SR should define requested action

**Source:**

|  |  |
| --- | --- |
| **Leading WG** | RAN1 |
| **Rapporteur** | **Name** | Kevin Lin |
| **Company** | OPPO |
| **Email** | Kevin.Lin@oppo.com |

## 1 Work plan related evaluation

|  |  |
| --- | --- |
| **Do you want to modify the time budget for this WI/SI compared to what was endorsed at the last RAN meeting?** | No |

*If you answered No: Then please remove the Excel file from the zip file of this status report.*

*If you answered Yes: Then please fill out the attached Excel template to request a modification of the time budgets for your WI /SI. The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI. The basis are the endorsed time budgets of the last RAN meeting. Please highlight all changes of the values.
 One time unit (TU) corresponds to ~ 2 hours in the meeting.
 If this status report covers a WI with Core and Performance part, then please have one line for each in the attached Excel table.
 Note: If no Excel table is attached, then this means no time budget change.*

**Additional explanations/motivations for the time budget changes in the attached Excel table:**

## 2. Detailed progress in RAN WGs since last TSG meeting (for all involved WGs)

 NOTE: Agreements and Open issues impacted cross-TSG aspects shall be explicitly highlighted

## 2.1 RAN1

#### 2.1.1 Agreements

**NR sidelink CA operation**

* On hold until further checking in RAN#97

**NR Sidelink operation in FR1 unlicensed spectrum**

**Agreement**

Type 1 and Type 2 (2A/2B/2C) channel access procedures, transmission gap and LBT sensing idle time requirements specified in TS37.213 for NR-U are taken as baseline for NR sidelink operation in a shared channel.

* FFS conditions for the actual channel access type(s) used for each SL channel and signal transmitted, and based on COT sharing conditions (if supported)
* FFS whether UL CAPC or DL CAPC or both should be used as the baseline,
	+ FFS how the channel access priority classes apply to each SL channel and signal
	+ FFS sidelink priority levels (PQI or L1 priority), channel and signal mapping to the 4 channel access priority classes. The discussion may involve other WGs.

**Agreement**

* UE-to-UE COT sharing is supported in NR sidelink operation in a shared channel (SL-U).
	+ FFS applicable SL channels and signals (e.g., PSCCH/PSSCH, PSFCH, S-SSB) for shared COT access and any restrictions (e.g. whether the COT can be shared with a single UE or multiple UEs)
	+ FFS all other details in compliance with the regulatory requirements
* CP extension (CPE) is supported for NR sidelink operation in a shared channel.
	+ FFS all remaining details including applicable scenarios, usage, PHY structure, etc.

**Agreement**

Channel access procedures for transmission(s) on multiple channels are supported for NR sidelink operation as defined by TS37.213 for NR-U (wherever applicable)

* FFS whether the downlink, uplink and/or semi-static multiple channel access procedure(s) (if supported) from NR-U should be used as a baseline and whether/how they are applied in SL mode 1 and mode 2 operation

**Agreement**

* The existing sidelink mode 1 RA including dynamic grant, Type 1 and Type 2 configured grants are supported as a baseline for sidelink operation in a shared carrier, subject to applicable regional regulations. At least in dynamic channel access, SL UE performs Type 1 or one of the Type 2 LBTs before SLtransmission using the allocated resource(s), in compliance with transmission gap and LBT sensing idle time requirements specified in TS37.213.
	+ FFS whether/how mode 1 resource allocation ~~selection~~ procedure needs to be updated / enhanced due to shared spectrum channel access
* The existing sidelink mode 2 RA schemes are supported as a baseline for sidelink operation in a shared carrier, subject to applicable regional regulations. At least in dynamic channel access, SL UE performs Type 1 or one of the Type 2 LBTs before SL transmission using the selected and/or reserved resources, in compliance with transmission gap and LBT sensing idle time requirements specified in TS37.213.
	+ FFS whether/how mode 2 resource selection procedure needs to be updated / enhanced due to shared spectrum channel access
* FFS whether/how multi-consecutive slots transmission can be supported for NR sidelink operation in unlicensed spectrum, including the following aspects
	+ channel access, resource allocation and PHY channel design
* FFS whether/how enhancement is needed between the end of the LBT procedure and the start of the SL transmission to retain channel access
* RAN1 to strive for a common solution for channel access for Mode 1 and Mode 2

**Agreement**

SL BWP, SL resource pool in R16/R17 NR SL and RB set in R16 NR-U are reused for SL-U as baseline

* Only one SL BWP is (pre-)configured within a carrier
* The SL BWP is (pre-)configured to include one or multiple SL resource pools
* At least support that one SL resource pool can be (pre-)configured to include integer number of RB sets
	+ FFS: whether/how to support one SL resource pool can include sub-set of PRBs of one RB set
	+ FFS: the applicable resource pool
	+ FFS: the impact on sub-channel size and number of sub-channels in a resource pool if sub-channel is supported
* PRBs within intra-cell guard band of two adjacent RB sets belong to a resource pool if the resource pool includes the two adjacent RB sets
	+ FFS details, e.g., how such PRBs are used, the applicable resource pool, etc.
* FFS: whether R16/R17 NR SL S-SSB slots and/or new S-SSB slots (if supported) are excluded from resource pool
* FFS: which slots belong to resource pool, e.g., how to set the value of bitmap, whether to consider SL-U/NR-U operating in the same carrier and whether TDD configuration are considered, etc.
* FFS: the impact of PSCCH/PSSCH mapping to frequency resources on resource pool configuration, on sub-channel definition if sub-channel is supported, etc.

**Agreement**

For PSCCH and PSSCH in SL-U:

* Both R16/R17 NR SL contiguous RB-based and R16 NR-U interlace RB-based transmissions are considered as starting point
	+ RAN1 strives to have unified design for both contiguous RB-based and interlace RB-based transmissions
	+ FFS: whether/how to address IBE (In Band Emission) impact

**Agreement**

For PSCCH and PSSCH in SL-U:

* For interlace RB-based transmission (if supported), at least the following candidates can be discussed:
	+ Frequency domain resource allocation granularity is one sub-channel for PSSCH transmission
		- FFS: Other resource allocation granularity, e.g., RB-level
	+ 1 sub-channel equals K interlaces if sub-channel is supported
		- FFS details
	+ Other candidates are not precluded
	+ FFS: mapping of PSCCH to frequency resources
	+ FFS: resource indication in time/frequency domain, e.g., how to handle using one RB set or multiple RB sets, etc.

**Agreement**

For slot structure in SL-U:

* At least R16/R17 NR SL slot-based PSCCH/PSSCH transmission is supported
	+ FFS: whether/how to support additional starting symbol(s) within a slot for the PSCCH/PSSCH transmission

**Agreement**

For PSFCH and SL-HARQ in SL-U:

* At least R16 NR SL PSFCH format 0 is supported
	+ FFS whether to introduce new PSFCH format
* FFS: how to meet OCB and PSD requirement for PSFCH transmission, e.g., using interlaced RB transmission, whether/how to avoid too small PSFCH capacity, etc.
* FFS: the locations of PSFCH resources, e.g., (pre-)configured, dynamically indicated, etc.
* FFS: whether/how to address PSFCH transmission dropping due to LBT failure, e.g., whether to have multiple PSFCH occasions for a PSSCH and the related PSSCH-PSFCH mapping relationship, impact on SL HARQ-ACK reporting to the gNB for Mode 1, etc.
* FFS: whether/how to address PSFCH and related PSSCH in different COTs

**Agreement**

For S-SSB and synchronization in SL-U:

* FFS the time domain locations of S-SSB resources, e.g., whether/how to introduce more candidate occasions compared with R16/R17 NR SL design, etc.
* Down-selection at least one of the following solutions to meet OCB and PSD requirement for S-SSB transmission
	+ Option 1: Using interlaced RB transmission
	+ Option 2: S-SSB multiplexing with other SL transmissions in the same slot
	+ Option 3: Repetition of S-PSS/S-SSS/PSBCH in frequency domain
	+ Option 4: S-PSS/S-SSS/PSBCH with wider bandwidth
* FFS: whether to support 4 symbols S-SSB
	+ Note: 4 symbols S-SSB can be considered with options 1/2/3/4 above
* FFS whether the temporary exemption of OCB requirement is applicable for S-SSB transmission
* FFS whether any changes to R16/R17 NR SL synchronization procedure

**NR sidelink enhancement in FR2 licensed spectrum**

* On hold until further checking in RAN#97

**Co-channel coexistence for LTE sidelink and NR sidelink**

**Agreement**

For co-channel coexistence in Rel-18, no changes in the LTE SL specifications are allowed.

**Agreement**

For co-channel coexistence in Rel-18, Rel-16/17 simulation assumptions are reused for evaluation of solutions, except for the UE dropping model.

* FFS: UE dropping model

**Agreement**

For the study of co-channel coexistence solutions in Rel-18, the combination of operational modes Mode 2 NR SL with Mode 4 LTE SL (Combination A) is considered with high priority.

* FFS: Whether/how to support Mode 1 NR SL + Mode 4 LTE SL (Combination B) and/or Mode 2 NR SL + Mode 3 LTE SL (Combination C).

**Agreement**

For evaluation of co-channel coexistence solutions in Rel-18, support the inclusion of dual module devices with NR+LTE modules using the following UE dropping models:

* UE Dropping Model A: The distance between 1 LTE SL module and 1 NR SL module are maintained as zero to model a co-located dual module device. The inter-device distance between any two adjacent devices in the same lane, which may be either a single module or a dual module device, is modified by doubling the time in the upper limit, resulting in max{2 meter, an exponential random variable with the average of the speed \* 4sec}.
* UE Dropping Model B: The distance between 1 LTE SL module and 1 NR SL module are maintained as zero to model a co-located dual module device. The inter-device distance between any two adjacent devices in the same lane, which may be either a single module or a dual module device, is maintained the same as current assumptions, i.e., max{2 meter, an exponential random variable with the average of the speed \* 2sec}.

Companies should mention the UE dropping model and the distribution of each device type (single/dual module) used in their simulation assumptions.

**Agreement**

Feasibility of semi-static resource pool partitioning and dynamic resource sharing as possible solutions for co-channel coexistence are to be studied.

**Agreement**

For studying the feasibility of dynamic resource sharing as a possible solution for co-channel coexistence,

* For device type A, the NR SL module uses the sensing and resource reservation information shared by the LTE SL module.
	+ FFS details on how the NR SL module uses this information.
	+ FFS details on how the LTE SL module shares the information to the NR SL module, exact information shared, timeline etc.
* FFS: Whether/how to define other method(s) for device type A to be aware of resources being occupied by LTE SL.
* FFS: Whether/how device type B should be supported.

#### 2.1.2 Remaining Open issues

* Study and specify support of sidelink on unlicensed spectrum for both mode 1 and mode 2 where Uu operation for mode 1 is limited to licensed spectrum only
* Study and specify enhanced sidelink operation on FR2 licensed spectrum (This part of the work is put on hold until further checking in RAN#97)
* Study and specify, if necessary, mechanism(s) for co-channel coexistence for LTE sidelink and NR sidelink including performance, necessity, feasibility, and potential specification impact if any

## 2.2 RAN2

#### 2.2.1 Agreements

- No scheduled meeting TU since the last RAN

#### 2.2.2 Remaining Open issues

* Mechanism to support NR sidelink CA operation based on LTE sidelink CA operation (This part of the work is put on hold until further checking in RAN#97)

## 2.3 RAN3

#### 2.3.1 Agreements

#### 2.3.2 Remaining Open issues

## 2.4 RAN4

#### 2.4.1 Agreements

- No scheduled meeting TU since the last RAN

#### 2.4.2 Remaining Open issues

* UE Tx and Rx RF requirement for supporting new features introduced in this WI, sidelink frequency bands for single-carrier operation and frequency band combinations for carrier aggregation operation
* UE RRM core requirement for the new features introduced in this WI
* UE demodulation performance requirements
* UE RRM performance requirements

## 2.5 RAN5

#### 2.5.1 Agreements

#### 2.5.2 Remaining Open issues

#### 2.5.3 Remaining Open issues with cross-WG dependencies

## 2.6 RAN6

#### 2.6.1 Agreements

#### 2.6.2 Remaining Open issues

## 3. Detailed progress in SA/CT WGs since last TSG meeting (for all involved WGs)

NOTE: This section only needs to be filled in for WI/SIs where there is a corresponding relevant WI/SI in SA/CT.

## 3.1 SAx/CTs

#### 3.1.1 Agreements with cross-TSG impacts

#### 3.1.2 Remaining Open issues with cross-TSG impacts

NOTE: This section should also flag any critical dependencies that need TSG attention.

## 4. References

NOTE: This can be e.g. a list of all related Tdocs in the affected WGs since last TSG, references to LSs, produced TRs/TSs, the work/study item description or status reports of previous TSGs.

**RAN1#109-e**

[1] R1-2203981 Work plan for NR sidelink evolution OPPO

[2] R1-2204093 Discussion on V2X use cases, scenarios, and requirements for SL-U TOYOTA Info Technology Center

[3] R1-2205113 Contention-Based Sidelink Burst Transmissions Johns Hopkins University APL

[4] R1-2203122 On Channel Access Mechanism and Evaluation Methodology for SL-U Nokia, Nokia Shanghai Bell

[5] R1-2203146 Channel access mechanism and resource allocation for sidelink operation over unlicensed spectrum Huawei, HiSilicon

[6] R1-2203331 Discussion on channel access mechanism for sidelink on unlicensed spectrum Spreadtrum Communications

[7] R1-2203365 Discussion on channel access mechanism for SL-U ZTE, Sanechips

[8] R1-2203461 Discussion on channel access mechanism for sidelink on unlicensed spectrum CATT, GOHIGH

[9] R1-2203561 Channel access mechanism for sidelink on unlicensed spectrum vivo

[10] R1-2203645 SL Channel access in unlicensed spectrum InterDigital, Inc.

[11] R1-2203657 Discusson on channel access mechanism for sidelink on unlicensed spectrum China Telecom

[12] R1-2203693 Channel Access of Sidelink on Unlicensed Spetrum NEC

[13] R1-2203703 Channel access mechanism for sidelink on FR1 unlicensed spectrum Lenovo

[14] R1-2203713 Discussion on channel access mechanism for sidelink on unlicensed spectrum LG Electronics

[15] R1-2203734 Discussion on channel access mechanism for SL-unlicensed Sony

[16] R1-2203749 Sidelink channel access on unlicensed spectrum Panasonic Holdings Corporation

[17] R1-2203818 Channel access mechanism for sidelink-unlicensed xiaomi

[18] R1-2203906 On channel access mehanism for sidelink on FR1 unlicensed spectrum Samsung

[19] R1-2203982 Access mechanisms of NR sidelink in unlicensed channel OPPO

[20] R1-2204084 SL-U General Access Considerations CableLabs

[21] R1-2204097 Discussion of channel access mechanism for sidelink transmission in unlicensed spectrum FUTUREWEI

[22] R1-2204194 Discussion on sidelink on unlicensed spectrum ASUSTeK

[23] R1-2204247 On channel access mechanism for sidelink on FR1 unlicensed spectrum Apple

[24] R1-2204306 Discussion on channel access mechanism for sidelink on unlicensed spectrum CMCC

[25] R1-2204382 Discussions on channel access mechanism in SL-U NTT DOCOMO, INC.

[26] R1-2204427 Discussions on Channel access mechanism for NR sidelink evolution Sharp

[27] R1-2204552 Discussion on channel access mechanism for SL on unlicensed spectrum WILUS Inc.

[28] R1-2204580 Disscusion of channel access mechanism for sidelink in unlicensed spectrum Transsion Holdings

[29] R1-2204607 NR Sidelink Unlicensed Channel Access Mechanisms Fraunhofer HHI, Fraunhofer IIS

[30] R1-2204730 Discussion on Channel access mechanism MediaTek Inc.

[31] R1-2204741 Channel access mechanism for SL-U Ericsson

[32] R1-2204802 On the Channel Access Mechanisms for SL Operating in Unlicensed Spectrum Intel Corporation

[33] R1-2204868 Discussion on channel access mechanism for sidelink on unlicensed spectrum ROBERT BOSCH GmbH

[34] R1-2205033 Channel Access Mechanism for Sidelink on Unlicensed Spectrum Qualcomm Incorporated

[35] R1-2205082 Considerations on unlicensed channel access for SL-U Fujitsu Limited

[36] R1-2203123 On Physical Channel Design Framework for SL-U Nokia, Nokia Shanghai Bell

[37] R1-2203147 Physical channel design for sidelink operation over unlicensed spectrum Huawei, HiSilicon

[38] R1-2203332 Discussion on Physical channel design for sidelink on unlicensed spectrum Spreadtrum [35] Communications

[39] R1-2203366 Discussion on physical layer structures and procedures for SL-U ZTE, Sanechips

[40] R1-2203462 Discussion on physical channel design framework for sidelink on unlicensed spectrum CATT, GOHIGH

[41] R1-2203562 Physical channel design framework for sidelink on unlicensed spectrum vivo

[42] R1-2203646 SL U physical layer design framework InterDigital, Inc.

[43] R1-2203694 Discussion on physical channel design framework NEC

[44] R1-2203704 Physical layer design framework for sidelink on FR1 unlicensed spectrum Lenovo

[45] R1-2203714 Discussion on physical channel design framework for sidelink on unlicensed spectrum LG Electronics

[46] R1-2203735 Discussion on physical channel design framework for SL-unlicensed Sony

[47] R1-2203750 Physical channel design for sidelink on unlicensed spectrum Panasonic Holdings Corporation

[48] R1-2203819 Physical channel design for sidelink-unlicensed xiaomi

[49] R1-2203907 On physical channel design framework for sidelink on FR1 unlicensed spectrum Samsung

[50] R1-2203983 Physical channel designs of NR sidelink in unlicensed channel OPPO

[51] R1-2204085 Discussion on resources on sidelink operation in unlicensed spectrum CableLabs

[52] R1-2204098 Discussion of physical channel designs for sidelink transmission in unlicensed spectrum FUTUREWEI

[53] R1-2204121 Discussion on Physical channel design framework for sidelink on unlicensed spectrum Hyundai Motors

[54] R1-2204248 On physical channel design framework for sidelink on FR1 unlicensed spectrum Apple

[55] R1-2204307 Discussion on physical channel design framework for sidelink on unlicensed spectrum CMCC

[56] R1-2204383 Discussions on channel design framework in SL-U NTT DOCOMO, INC.

[57] R1-2204428 Discussions on physical channel design framework for NR sidelink evolution on unlicensed spectrum Sharp

[58] R1-2204553 Discussion on PHY channel design framework for SL on unlicensed spectrum WILUS Inc.

[59] R1-2204581 Disscusion of physical channel design for sidelink in unlicensed spectrum Transsion Holdings

[60] R1-2204608 NR Sidelink Unlicensed Physical Channel Design Fraunhofer HHI, Fraunhofer IIS

[61] R1-2204731 Discussion on Physical channel design framework MediaTek Inc.

[62] R1-2204742 PHY channel design framework for SL-U Ericsson

[63] R1-2204803 On the Enhancements to the Physical Channel Design for SL Operating in Unlicensed Spectrum Intel Corporation

[64] R1-2205034 Physical Channel Design for Sidelink on Unlicensed Spectrum Qualcomm Incorporated

[65] R1-2203124 On Co-channel Coexistence for LTE Sidelink and NR Sidelink Nokia, Nokia Shanghai Bell

[66] R1-2203148 Co-channel coexistence for LTE sidelink and NR sidelink Huawei, HiSilicon

[67] R1-2203333 Discussion on Co-channel coexistence for LTE sidelink and NR sidelink Spreadtrum Communications

[68] R1-2203367 Study on co-channel coexistence for LTE sidelink and NR sidelink ZTE, Sanechips

[69] R1-2203463 Discussion on co-channel coexistence for LTE sidelink and NR sidelink CATT, GOHIGH

[70] R1-2203563 Co-channel coexistence for LTE sidelink and NR sidelink vivo

[71] R1-2203642 On sidelink co-channel coexistence issues Mitsubishi Electric RCE

[72] R1-2203658 Discusson on co-channel coexistence for LTE sidelink and NR sidelink China Telecom

[73] R1-2203668 Discussion on Sidelink Co-channel Coexistence Panasonic Holdings Corporation

[74] R1-2203695 Co-existence between LTE and NR sidelink NEC

[75] R1-2203705 Discussion on co-channel coexistence for LTE sidelink and NR sidelink Lenovo

[76] R1-2203715 Discussion on co-channel coexistence for LTE sidelink and NR sidelink LG Electronics

[77] R1-2203736 Discussion on co-channel coexistence for LTE sidelink and NR sidelink Sony

[78] R1-2203820 Discussion on co-channel coexistence for LTE and NR sidelink xiaomi

[79] R1-2203908 On co-channel coexistence for LTE sidelink and NR sidelink Samsung

[80] R1-2203984 Discussion on co-channel coexistence for LTE and NR V2X OPPO

[81] R1-2204049 Co-channel coexistence for LTE sidelink and NR sidelink InterDigital, Inc.

[82] R1-2204249 On co-channel coexistence for LTE sidelink and NR sidelink Apple

[83] R1-2204308 Discussion on co-channel coexistence for LTE sidelink and NR sidelink CMCC

[84] R1-2204384 Discussions on co-channel coexistence of LTE-SL and NR-SL NTT DOCOMO, INC.

[85] R1-2204429 Discussions on co-channel coexistence for LTE sidelink and NR sidelink Sharp

[86] R1-2204585 Considerations on co-channel coexistence for LTE SL and NR SL CAICT

[87] R1-2204609 Discussion on Co-Channel Coexistence for LTE and NR Sidelink Fraunhofer HHI, Fraunhofer IIS

[88] R1-2204652 Discussion on co-channel coexistence for LTE sidelink and NR sidelink ETRI

[89] R1-2204720 On co-channel coexistence between LTE sidelink and NR sidelink MediaTek Inc.

[90] R1-2204740 Co-channel coexistence between LTE sidelink and NR sidelink Ericsson

[91] R1-2204867 On co-channel coexistence between LTE and NR sidelink ROBERT BOSCH GmbH

[92] R1-2205035 Co-channel Coexistence Between LTE SL and NR SL Qualcomm Incorporated

[93] R1-2203368 Analysis on channel access efficiency of SL-U ZTE, Sanechips

[94] R1-2203464 Discussion on the scopes of Rel-18 Sidelink evolution CATT, GOHIGH

[95] R1-2203647 SL U QoS management InterDigital, Inc.

[96] R1-2203667 Discussion on sidelink operation on unlicensed spectrum vivo

[97] R1-2203985 Coexistence evaluation of SL-U and Wi-Fi OPPO

[98] R1-2204250 On other topics of NR sidelink evolutions Apple

[99] R1-2204743 Other aspects related to SL-U Ericsson

[100] R1-2204912 Further consideration on evaluation methodology for sidelink operation over unlicensed spectrum Huawei, HiSilicon

 10.01.2022 minor adaptations for RAN #95e

 04.10.2021 minor adaptations for RAN #94e

 08.08.2021 minor adaptations for RAN #93e

 17.05.2021 minor adaptations for RAN #92e

 28.01.2021 minor adaptations for RAN #91e

 09.11.2020 minor adaptations for RAN #90e

 31.08.2020 minor adaptations for RAN #89e

 20.04.2020 minor adaptations for RAN #88e

 18.02.2020 minor adaptations for RAN #87e

 14.11.2019 minor adaptations for RAN #86

 18.08.2019 minor adaptations for RAN #85

 12.05.2019 minor adaptations for RAN #84

 27.02.2019 minor adaptations for RAN #83

 21.11.2018 completion levels with colours added (for RAN #82)

v04.81 31.07.2018 simplification of template and addition of cross-TSG aspects (for RAN #81)

v04.80 21.05.2018 minor adaptations for RAN #80

v04.79 26.02.2018 minor adaptations for RAN #79

v04.78 18.11.2017 minor adaptations for RAN #78

v04.77 06.08.2017 minor adaptations for RAN #77

v04.76 15.05.2017 minor adaptations for RAN #76

v04.75 31.01.2017 minor adaptations for RAN #75

v04.74 28.10.2016 minor adaptations for RAN #74

v04.73 01.09.2016 adaptations for RAN #73 (time units in extra Excel table, RAN6 reporting included)

v04.72 26.05.2016 adaptations for RAN #72 (introduction of NR & GERAN TUs)

v04.71 10.02.2016 minor adaptations for RAN #71

v04.70 30.10.2015 minor adaptations for RAN #70

v04.69 12.08.2015 minor adaptations for RAN #69

v04.68 21.05.2015 minor adaptations for RAN #68

v04.67 01.02.2015 minor adaptations for RAN #67

v04.66 16.11.2014 minor adaptations for RAN #66

v04.65 16.08.2014 minor adaptations for RAN #65

v04.64 22.05.2014 minor adaptations for RAN #64

v04.63 24.01.2014 restructuring for RAN #63 to cover Core & Perf. in one doc file

v03.62 11.11.2013 section 1.2.3 adapted for RAN #62

v03 11.08.2013 section 1.2.3 added on time budget

v02 07.05.2010 history added, some spelling corrections

v01 13.11.2009 First version of the template