








RAN workshop on 5G: Chairman Summary

Dino Flore

Chairman of 3GPP RAN

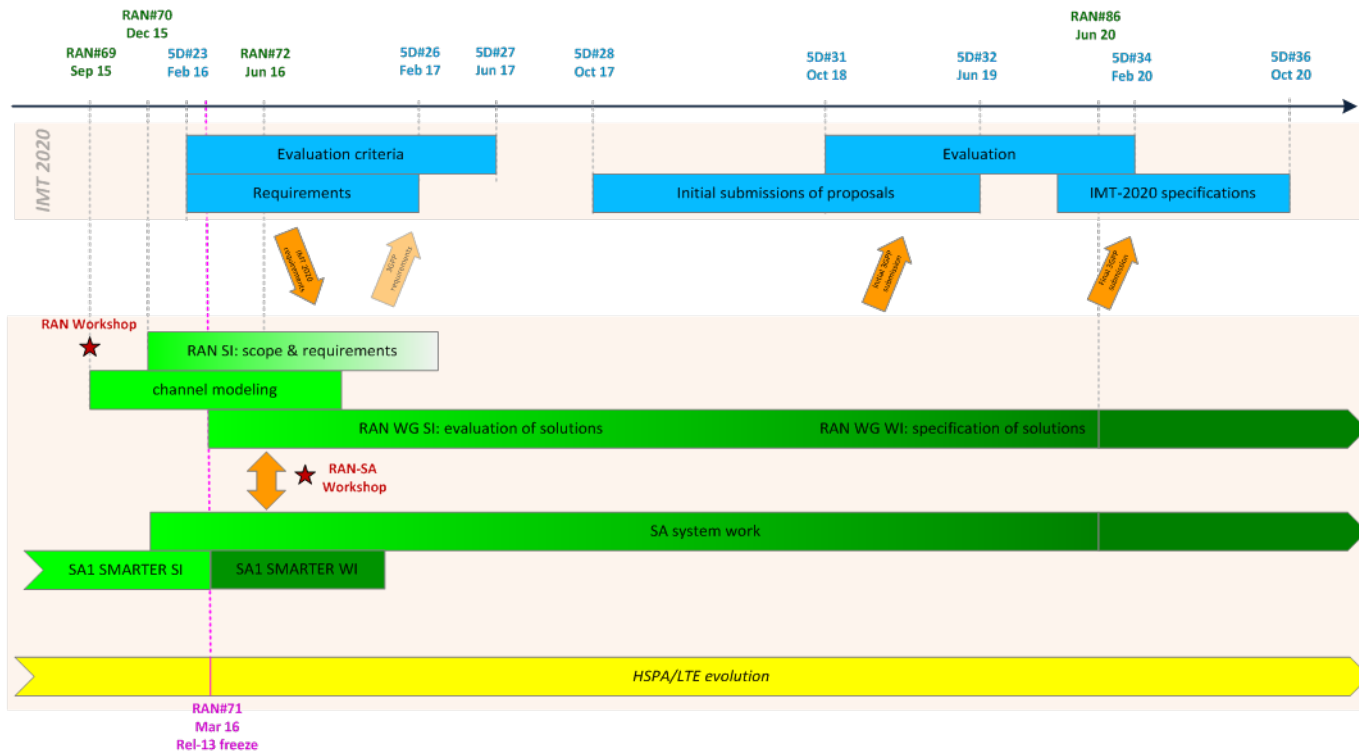
Outline

-  Introduction
-  Usecases & services
-  New radio
-  Phasing and its implications
-  Next steps

Introduction

- 📶 This document is my synthesis of the workshop [contributions](#) and discussion, to help companies achieve convergence in follow-up discussions
- 📶 The document tries to highlight the emerging consensus on the RAN project planning on “5G” as well as the issues where more discussion is needed

Starting point: SP-150149



Usecases & Services

- 📶 Three emerging high level usecases for Next Generation Radio Technology (also from IMT 2020 discussion):
 1. Enhanced Mobile Broadband
 2. Massive Machine Type Communications
 3. Ultra-reliable and Low Latency Communications

- 📶 Wide agreement that the Next Generation Radio Technology should be able to support a variety of new services
 - Automotive, Health, Energy, Manufacturing ...
 - Some of these new services are being described by SA1 in the SMARTER project

New radio

- Emerging consensus that there will be a new, non-backward compatible, radio as part of Next Generation Radio Technology
 - Strong LTE evolution continued in parallel
- The requirements and scope of the new radio will be established by RAN in the SI starting in December
 - WGs will then proceed with the evaluation of technology solutions in the SI starting in March

Phasing

- Emerging consensus that there should be two phases for the normative work
 - Phase 1 to be completed by H2 2018 to address a more urgent subset of the commercial needs (to be agreed)
 - Phase 2 to be completed by Dec 2019 for the IMT 2020 submission and to address all identified usecases & requirements
- The above implies the following, tentative, release timing



* NOTE: Dates above refer to “stage-3 functional freeze” of specs. ASN.1 freeze is typically one quarter after that.

Phasing: forward compatibility

- 📶 It seems widely agreed that, while the normative work can be phased to initially specify support for only a subset of the identified usecases & requirements, the design of the new radio should be forward compatible so it can optimally support the remaining usecases & requirements that will be added in a later phase

- 📶 So forward compatibility should be a design requirement for the new radio from the get-go
 - Study item should include careful investigation of design options to ensure forward compatibility for all use cases
 - Phase 1 work item should include specification support to ensure the forward compatibility to enable later deployment of the additional services

- 📶 The exact forward compatibility requirement needs to be defined and captured in the technology SID for approval in March

Phasing: prioritization


- 📶 Phasing of the normative work will lead to some form of prioritization for phase I

- 📶 However at this stage there is lack of consensus on
 - Whether prioritization should already occur in the study phase
 - Whether there should be prioritization of frequency ranges
 - Which usecases should be prioritized

- 📶 Ideally the above should be resolved by March 2016 when we are likely to approve the WGs study

Channel modeling for high frequencies



-  RAN#69 just approved new Study Item on channel modeling for spectrum above 6 GHz ([RP-151606](#))
 - In Q4 2015 RAN will identify status & expectations on high frequencies (e.g. spectrum allocation, scenarios of interest, measurements, etc)
 - From Q1 2016 RAN1 will develop a channel model(s) for frequencies up to 100 GHz

Interworking & System Architecture



- There seems to be a need to also rethink the System Architecture for “5G”
 - This will be debated under the new SI to be approved by SA
- The level of interworking of the new radio with the legacy systems needs to be discussed more in detail – different opinion & nuances seems to exist
 - This discussion will be done in cooperation with SA group (for this it may be also useful the joint workshop tentatively planned for H2-16)

Next steps

- 📶 RAN to identify status & expectations on high frequencies in Q4-15 so that the channel modeling work can start in RAN1 in Q1-16
- 📶 RAN to approve in December a Study Item to develop scenarios and requirements for next generation radio technology
- 📶 RAN to approve in March a Study Item for RAN WGs to evaluate technology solutions for next generation radio technology
- 📶 Companies should look for convergence on the outstanding high level items where there is lack of consensus (see slide 9)