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On RAN operations

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Background

- The approval process for new WI/SIs has room for improvement in order to cope with the increasing number of proposals and avoid overload situations

- This document discusses some proposals to improve such process, while keeping RAN efficient and transparent

Three ideas to improve RAN operations

- Project management discipline
- More on-line discussions on new proposals
- Shorter Release cycle & distributed approval process

Project management discipline

The Issue

- Lack of time/resource accountability in the WI/SI approval process, often leading to
  - No clear understanding of the work involved in each proposal
  - Vicious circle where we often approve very broad WI/SIs
    - As today there is little accountability, lots of (often low-priority) items are added *at will* to gain supporters and ease the WI approval
    - Worse, some of those (often low-priority) items will not be finalized in a release due to lack of time, but then rolled over to the next release with the justification that «*they were agreed*»
    - Hence clogging the next release with low-priority items that were added to ease WI approval in the previous release
  - Preventing to address other relevant items that could emerge later in the release

The Proposal

- Introduce some project management discipline, including
  1. Use of time budget requests for new SI/WI proposals
  2. Stricter completion dates

- Already discussed in RAN#58 (RP-121706)
  - The use of time budget requests was endorsed in RAN#58
    - With already some positive effects!
  - Further discussion was needed on the stricter completion dates
    - Currently, SI/WIs are often lightheartedly extended as part of SR presentations, which is not consistent with the objective to introduce more time/resource accountability in the WI/SI approval process
    - After some discussion in RAN#58 it seemed we could converge towards the use of some sort of *extension sheets* to continue working on WI/SIs past their original deadline
      - **I would like to try this out to complete the project management discipline proposal!**

Regarding time budget requests

- Time budget requests are an useful tool to estimate WGs load and to enable some project management discipline
- But the TU should not become the *currency* to be used in the approval process *market*!

- For new WI/SI proposals, as discussed in the following, we first need to discuss their merit and scope; after that, proposals should be checked against their time budget requests to see what can be reasonably added to the workplan without causing WG overload
- For already approved WI/SIs, the starting point are the time budgets endorsed at the meeting before. But any existing allocation can be re-discussed provided that some specific concerns or suggested improvements are raised at the meeting
  - Preferably, such concerns or suggested improvements should be documented e.g. by WG Chairs in WG reports, or by rapporteurs when submitting SRs, or by companies via dedicated contributions

More on-line discussions on new proposals

The Issue

- There is very little online discussion on the merit of new proposals
- We are thus missing an important occasion when companies can assess merits, criticalities and level of support of each proposal before the discussion is sent offline
- In many cases offline discussions are then not structured and often done in unicast between pair of companies

The Proposal

- Have enough online discussion on new proposals

- Where do we find the time?
  - As a starting point we should try to make some space in RAN meetings by automating some tasks
  - **This is the reason why we are trying the block approval of CR / SRs starting already from this meeting!**

Shorter release cycle & distributed WI approval

The Issue

- We create spike of proposals at the beginning of each release, and then struggle to find ways to handle them
  - But why do we have such spikes? The main reason for it is that we recently:
    - Moved to longer release cycles: see **Annex I**
    - Almost formally link WIs to releases, with long call-for-proposals at the beginning of each release
  - The above has increased pressure on companies to submit proposals all at the same time, sometime despite their level of maturity

- Because of the above, we end up in situations where we have to postpone or reject a large amount of proposals, without having a transparent mechanism to do so
  - And without sufficient discussion on the merits of the proposals

- The fact that the number of contributors has increased made things worse. This is not the main problem, but yet one more reason to make the process more efficient and transparent!

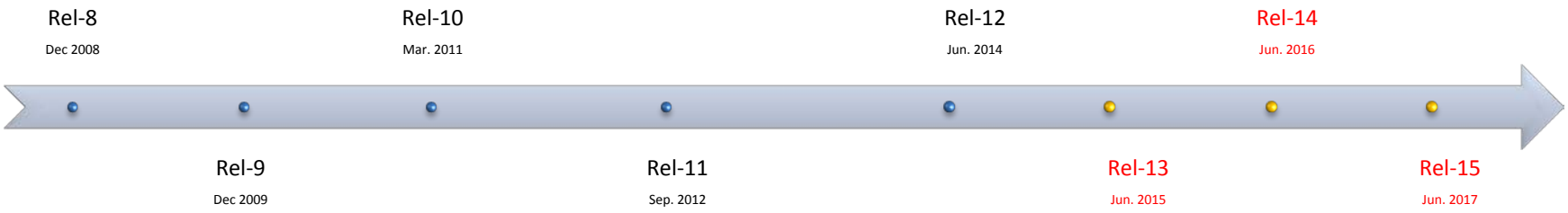
The Proposal

- Consider going back to a shorter release cycle & distributed approval process:
  - No explicit call for proposals
  - Distribute approval process to reduce the link between WIs & Releases

- The spirit of the above is that:
  - New proposals are submitted by companies when they consider them mature
  - The proposals are approved by RAN after being vetted by enough discussion and against the project management discipline (in line with the previous two proposals in this presentation)
  - Once a WI is complete, the corresponding features/CRs will be implemented at the next available release freeze
    - Note also the link with strict completion dates here, to better decouple WI and releases and avoid that WIs will always use up all the time in a release

The Proposal (cont'd)

- Ideally moving forward we could target a fix 1-year release cycle schedule, as shown below:



- Thus avoiding the highly speculative guesswork we do before each release on "how long next release should be?"
- NOTE I: Obviously the above would have to be coordinated with SA/CT
- NOTE II: If in the future there is a need to expand the release cycle to fulfill any specific requirement, then we can adapt accordingly

Q&A (1)

- Question:
  - There must have been a reason for increasing the release cycle. Isn't that reason valid any longer?

- Answer:
  - The main reason for it was that some people thought that this would slow down the standardization process and close the gap between what is being standardized and what is being deployed*
  - But did the longer release cycle achieve the above goal? Not really!
    - We are likely producing the same amount of features per year (or even more).
      - See also **Annex II** showing steady increase in approved WIs per year which, all things being the same, likely means same or more features produced per year
    - The only thing we slowed down is the release numbering's frequency!

**NOTE: whether such gap exists and needs to be fixed is an interesting topic on its own, but it is outside the scope of this presentation!*

Q&A (2)

- Question:
  - What if - after implementing all these proposals - there is still some overload i.e. number of proposals still exceeds what can be processed by the WGs?

- Answer:
  - In that case we are left with two options and we should have an open discussion to decide on which way to go:
    1. Have a transparent prioritization mechanism e.g. voting-based selection
       - With the understanding that there is a fine line between finding ways to prioritize what is relevant and sticking to the 3GPP working procedures to accept new proposals as long as they have four supporting companies and no sustained objection.
    2. Increase WG capacity
       - But note that because of the previous proposals such increase should be less onerous
  - Until then, we should select new proposals to be added to the workplan based on the actual level of support they have at the meeting
    - Informal ways, such as show-of-hands, could be used to assess the level of support

Q&A (3)

- Question:
  - What is the impact on products / deployments ?

- Answer:
  - Obviously part of the answer is subjective, and for that companies should check internally on their impact (if any)
  - What can be observed objectively is the following:
    - Long releases are likely to cover a large number of diverse features that can never be implemented all at once in products (both on terminal and network side)
      - In fact products of a (long) release are very likely to have sub-cycles, to phase-in the various and diverse features in the market
      - This is the case for instance of R10 which is starting to be deployed. For instance, can anyone name an initial Rel-10 deployment supporting CA + eMIMO + eICIC + MDT, … ?
    - A regime with short releases has the built-in flexibility to more quickly bring to the market some features if and when the market need arises
      - An example for that could be DC-HSDPA (SI proposed in March 2008; it was converted to a WI in June 2008; specs were complete by Dec 2008 and the technology was commercialized in 2009)

Q&A (4)

- Question
  - Would short release cycles mean that we cannot standardize big features?

- Answer
  - Sometimes there is confusion between long releases and big features, where some people assume that long releases are needed to introduce big features.
  - That is not necessarily the case. Big features can be standardized in a regime with shorter release cycles as well.
    - This simply means that some large features may have to be developed over the course of few releases (e.g. work on a feature starts sometime during Rel. X; work is finalized and the feature implemented in the spec in Rel. X+3).
    - An example is for instance the first LTE release, which was implemented in the specs in Rel-8 (one year release cycle)

Q&A (5)

- Question:
  - Wouldn't short release cycles increase the standardization overhead?

- Answer:
  - True, short cycles are likely to increase the standardization overhead, especially for RAN2 and RAN3 that will have to deal with more frequent ASN.1 freezes
  - On the other hand, ASN.1 reviews of long releases, where many features are added at once in the spec, are much more complex and error prone
    - Hence, partly depleting the standardization overhead gain of long releases or creating extra delays (as recently happened for Rel-11!)

Q&A (6)

- Question:
  - While secondary, it was useful to have a workshop at the beginning of Rel-12 to see the emerging trends. How does that fit with this proposal?

- Answer:
  - If deemed beneficial, we can still hold workshops regularly. But we should avoid that these become giant call for proposals. Some Ideas:
    - Time the workshop not exactly in synch with the beginning of a release
    - Market the workshop as *beyond* (instead of *for*) a certain release
      - With the understanding that proposals will then be handled as per discussion in slide 13

Conclusion

- Based on the above considerations, I would like to:

In the short term:

- Try the use of some sort of *extension sheets* to continue working on WI/SIs past their original deadline
  - Details to be agreed at this meeting; proposal to be applicable starting from next meeting
- Continue (and improve) the CR / SR block approval process
- Have more on-line discussion on new WI/SI proposals

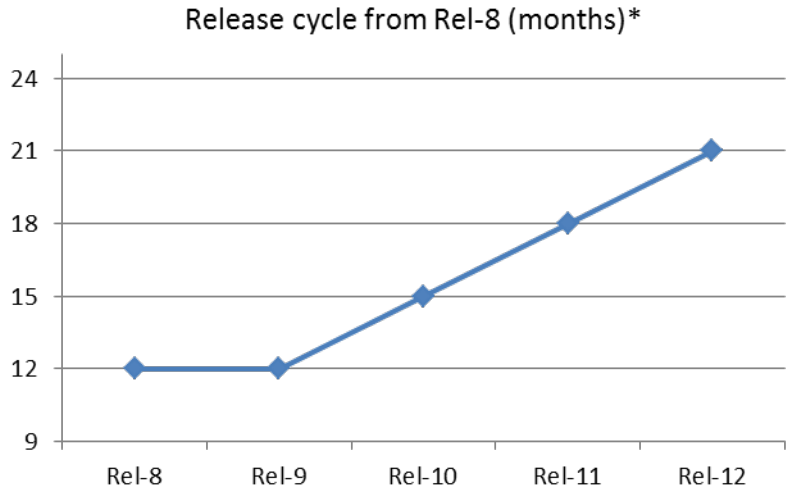
In the long term:

- Companies to consider the proposal to go back to a shorter release cycle & distributed approval process (starting e.g. from Rel-13)

Annex

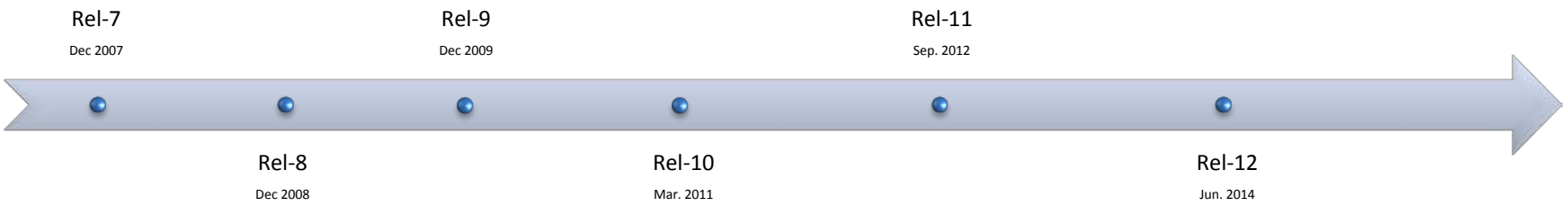
Annex I

- Leaving aside remote history, from the first LTE release the tendency has been to increase the release cycle



* Release cycle for Rel-X is the time interval between the freeze of Rel-X and the same event for Rel-X-1

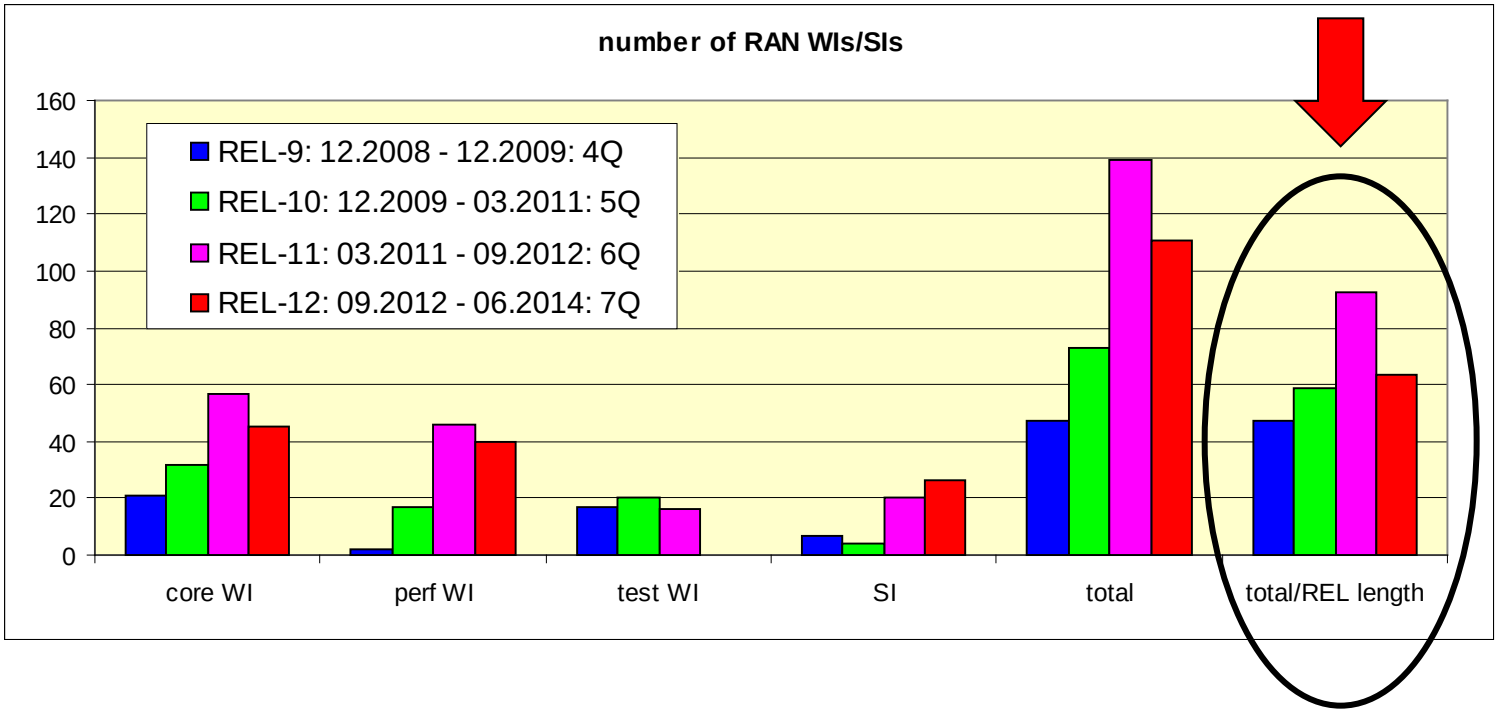
Historical release freeze dates since Rel-7 (soruce: http://www.3gpp.org/Releases)



Annex II

Source: RAN report to PCG#30 (April 2013)

Comparison of number of RAN WIs/SIs

- 6 months after the REL-12 start

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