Source:	**Cingular Wireless**
Title:	**Scope and Timeframes for Release 7**
Agenda item:	**9.10**
Document for:	**Discussion & Adoption**

1.0   Introduction

This contribution highlights the need for delineating the features that are being worked on currently or are in the planning stages for Rel 7 versus Long Term Evolution. It also provides a perspective on these activities relative to the longer term future of the Beyond 3G timeframe, a work activity which should be addressed by follow-on activities to be initiated at some future date.

Cingular Wireless believes that understanding the progression of the work of 3GPP as a continuum roadmap of activities, that is, Release 7, Long Term Evolution, and Beyond 3G is necessary to provide a distinct focus to the respective parts of the work over time. This contribution addresses Release 7 within that context.

It is well understood that Rel 7 is mainly concerned with fine-tuning and incrementally improving and/or correcting the features and capabilities defined in Rel 6. We expect that Rel 7 will focus on the near term 3GPP standards. We view Long Term Evolution to extend 3GPP standards into the mid-term years and build a foundation for the future out to at least 2012 in the marketplace. Lastly, we see Beyond 3G as work that will take the standards beyond 2012.

It is important for 3GPP RAN and SA to provide a clear direction on the scope of Rel 7 coming out of the March 2005 meeting. In this regard, Cingular Wireless understands that during the March meeting, the intent is to define the scope of the Release 7 work and come up with a work plan which will cover anticipated Rel 7 work items and CR expectations as well as to affirm the closing date for Rel 7.

This will then clearly delineate Release 7 features and capabilities from those that belong in the scope of LTE and the future Beyond 3G.

2.0   Time Frames

Cingular Wireless offers the following view on the timeframes on the work within 3GPP and believes that this view is important in managing the work and in understanding the relationship of the deliverables among the work activities.

- **Near Term (up to 2008) should be addressed by the on-going work on Release 7.**

Release 7 should focus on the issues directly related to market deployment and the customer experience and to fine-tune and incrementally improve/correct R6 and earlier standards to ensure that UMTS/HSDPA products and services are of high quality, perform correctly and are as fully featured as intended.

The target for near term is focused on UMTS immediate deployment related issues, for a time frame of 2007 and 2008. Smooth transition from GSM to UMTS and capacity and performance enhancement of current specifications and HSDPA should be given the highest priority to make sure that HSDPA and E-DCH (that is both the downlink and the uplink) are fully deployable with high satisfaction with regards to the customer experience.

Consideration should be to fine-tune and incrementally improve/correct the standards to ensure impending products using, for example, Release 6 & 7 in both UMTS/HSDPA are meeting goals in:
    Operational Considerations
    Incremental Performance Enhancements
    Technical Requirements
    Standards Needs (CRs)

Adopt as a goal to achieve in the near term greater stability – if there is no need for major changes based on market place drivers to trigger a major release update – then concentrate on standards changes and work activities for Release 7 so that Release 7 can be closed by March 2006. Work should be supported and advanced which promotes performance enhancements and service improvements in terms of quality of service, spectrum efficiency, capacity enhancements, and interference robustness and interference mitigation.

- **Midterm (2008 to 2012) should be addressed by the Long Term Evolution Study Item.**

    Targeting capacity and data rate enhancements to support new services and features requiring higher levels of capability and performance are primary goals and drivers for this phase. The data rate can be up to 100 Mbps with necessary network architecture and technology enhancements. It could include the support of full IP based network and harmonization with other RATs.

    Long Term Evolution encompasses the technology developments needed to support market needs and business drivers of 2008 to 2012 and beyond in improving:
      Spectrum efficiency/utilization
      Voice capacity and quality
      Data capabilities:
              Significantly higher data rates
              Lower latency
              Real time IP services
              Best-in-class capabilities

- **Long Term (2012 and beyond) should be addressed by follow-on activities to be initiated at some future date.**

Long term (beyond 2012) should be addressed by activities that are initiated after the conclusion on the LTE Study Item and any LTE Work Items that follow. Data rate higher than 100 Mbps is required. This would more fully support the global initiative on Beyond 3G, such as the vision created by ITU-R Working Party 8F in Recommendation ITU-R M.1645 "Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000", and related ITU-R documents.

3.0 Rel 7 Work Areas

The following lists some work aspects that may be included in Release 7.

Table 1 - Rel 7 Work Aspects
Continued Post Rel-6 RAN Improvements
Improvements for MBMS
Improvements for PS Streaming Service
MMS Enhancements
LCS Enhancements (A-GPS & U-TDOA)
Network Sharing Improvements
Further Improvements in Audio Codecs
Further Improvements in Video Codecs
Additional Security Enhancements
Priority Service
End-to-End QoS Management
Improvement of Receiver Performance
Utilization of Advanced Techniques such as Pilot Cancellation, etc
Receiver Diversity Improvements
Accommodation of Additional Frequency Bands
Specifications Related to Tower Mounted Amplifiers and Similar Concepts
Improved Performance Requirements for HSDPA & E-DCH
Continued Development of Specifications for "Repeaters"
Overall 'Clean-Up" of the Specifications & Improvement in Existing Documentation
Review of "Options" In Specifications To Remove Unneeded Alternatives

We note that the following Release 7 Items were in the TSG RAN#26 report:

	TABLE 2 – Rel 7 Identified Work Areas				
Type	WI Name	WI Code	Leading WG	%	Finish Date
Feat	**Rel-7 Improvements of Radio Interface**	RInImp	RP		June 2005
BB	UMTS 2.6 GHz	RInImp-UMTS2600	R4	15	June 2005
New BB	UMTS 2.6 GHz TDD	RInImp-UMTS2600TDD	R4	0	Dec 2005
New BB	UMTS 900	RInImp-UMTS900	R4	0	Sept 2005
New BB	UE Antenna Performance Evaluation Method and Requirements	RInImp-UEAnt	R4	0	Sept 2005
Feat	**Rel-7 RAN improvements**	RANimp	RP		Dec 2004
New WT	Optimisation of channelisation code utilisation for 1.28 Mcps TDD	RANimp-RABSE-CodOptLCRTDD	R1	30	Sept 2005
BB	UE positioning Rel-7	LCS3-UEpos	RP		
WT	Inclusion of Uplink TDOA UE positioning method in the UTRAN specifications	LCS3-UEPos-UTDOA	R2	20	June 2006
Feat	**Multiple Input Multiple Output antennas (MIMO)**	MIMO	R1		Dec 2005
BB	MIMO - Physical layer	MIMO-Phys	R1	60	March 2005
BB	MIMO - Layer 2,3 aspects	MIMO-L23	R2	0	Dec 2005
BB	MIMO - Iub/Iur Protocol Aspects	MIMO-IurIub	R3	0	Dec 2005
BB	MIMO - RF Radio Transmission/Reception, System Performance Requirements and Conformance Testing	MIMO-RF	R4	5	Dec 2005
Feat	**7.68Mcps TDD option**	VHCRTDD	RP	0	March 2006
BB	7.68Mcps TDD option: Stage 2	VHCRTDD-Stage2	R1	0	Sept 2005
BB	7.68Mcps TDD option: Physical Layer	VHCRTDD-Phys	R1	0	Sept 2005
BB	7.68Mcps TDD option: Layer 2 and layer 3 protocol aspects	VHCRTDD-L23	R2	0	Sept 2005
BB	7.68Mcps TDD option: UTRAN Iub/Iur Protocol Aspects	VHCRTDD-IurIub	R3	0	Sept 2005
BB	7.68Mcps TDD option: RF Radio Transmission/ Reception, System Performance Requirements and Conformance Testing	VHCRTDD-RF	R4	5	March 2006

3.0   Recommendation

Cingular Wireless proposes that the above Time Frames and the Release 7 list of work be discussed and documented so as to clearly reflect the scope of Rel 7 work. We recognize that

the list in Table 1 is not exhaustive and is included to show our view of the scope of the proposed work that should be included with Release 7.

Furthermore, as the currently anticipated Release 7 items as presented in Table 2 appear to be related to performance enhancements and service improvements in terms of quality of service, spectrum efficiency, capacity enhancements, and interference robustness and interference mitigation, we would propose that the closing of Release 7 be set at March 2006 in order for the required improvements and updates to be brought to the marketplace as soon as possible.

We urge that close coordination between Release 7 and the scope of the work in the LTE be continued to ensure consistency and continuity and to avoid unnecessary overlap.