SMART 2016/0046
Study on Fixed and Mobile Convergence in Europe

Workshop Broadband Mapping Smart 2014-0016 meeting
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Agenda

1. Overall goals of the study
2. Methodology: the 6 Tasks
3. Timetable and key deliverables
Overall objectives of the study

1. **Analyse fixed-mobile convergence** - at service, infrastructure and market level - in Europe, with its evolution and identify future trends that may improve connectivity in Europe

2. **Complement the EU Integrated Platform** under development by the Mapping Study (phase II): *Mapping of Broadband Services in Europe (SMART 2014/0016)*

3. **Support the EU policy-making process** by providing a clear understanding of the difference of coverage and QoE/QoS measurements among Member States and other measurement approaches

4. **Based on the data collection and initial analysis and recommendations of SMART 2014/0016**, **assess the technical/political/economic obstacles** that prevent the **definition of common coverage measurements** - broadly accepted ways of measuring connectivity parameters like download or upload speeds in the Union
The study must also reply to two key questions

• Can fixed mobile convergence overcome the lack of broadband access in certain areas, as called for in the DSM strategy, and close the digital divide with adequate QoS and QoE?

-and linked to this:-

• Can coverage obligations for converged fixed mobile services improve connectivity throughout the Member States?

Answering these questions requires inputs from the data collection and the initial analysis and recommendations of the companion study SMART 2014/0016 Broadband Mapping
The study is comprised of 6 main Tasks

**TASK 1  Is Mobile a substitute for fixed ?**
Analyse and assess to what degree fixed and mobile networks are complementary and under what conditions mobile networks can still be seen as a substitute especially in terms of pricing and quality;
*This task will take into account service, infrastructure and market factors and show how fixed and mobile convergence has evolved so far and will likely further evolve in the future.*

**TASK 2  Will convergence (FMC) be the key enabler for the future?**
Assess to what extent the convergence between fixed and mobile will be a key enabler to meet the new connectivity needs;
*In addition to the question of complementarity under TASK 1, included here is the possible importance of access to fixed networks for mobile backhaul in the context of network densification through rollout of small cells and similar measures.*

**TASK 3  What are the critical Coverage Obligations to be met across the EU?**
Analyse the differences and effects of regulatory coverage obligations in the Member States in terms of their connectivity improvements and market impacts.
*This task should analyse the effect of coverage obligations design both in terms of connectivity improvements and impacts on markets. Using this, the task should identify broadly applicable key elements which could serve as guidelines for future coverage obligations, as opposed to only market specific elements. As a minimum, parameters such as population and territory should be examined.*
TASK 4  Compare QoS and QoE methodologies using current information

Taking into account the datasets available in the EU Integrated Platform (SMART 2014/0016) and the work carried out by BEREC, analyse the comparability of different QoS and QoE measurement approaches;

In the context of the EU Integrated Platform, many different approaches to measure QoS and QoE used by member states and private initiatives have been identified. The BEREC working group on net neutrality works, amongst others, has worked towards identifying a common approach on the member state level. Based on this, the task should analyse the advantages and disadvantages of other approaches and in how far they could be compared.

TASK 5 A commonly acceptable standard to measure network performance

Identify key elements to define a common standard to measure network performance and the elements that need to be set in place for it to become universally accepted;

Taking into account task (4) and on-going standardisation activities for network performance measurements (e.g., within IETF), this task should investigate key elements that commonly accepted standards would have to cover and what obstacles need to be overcome in order to make such a standard acceptable for all stakeholders involved.

TASK 6  Key Performance and Reliability Indicators for NRAs

Indicate and provide a list of key indicators that allow regulators to monitor and enforce high performance and reliability of networks. Additionally, compare them with countries beyond the EU.

Analysis of the current means of enforcement of coverage obligations in EU Member States, is the goal, comparing them with other systems in the world (USA, Japan and South Korea), to arrive at the most relevant indicators to be harmonised across the Union.
Project schedule for the study

1. Inception Meeting, M1
   - Inception Report D1
   - Inception Meeting Minutes

2. Conference calls
   - CC2

3. Final
   - CC3

4. Interim Meeting M2
   - Interim study Report D4
   - Minutes Interim Meeting D3

5. Final
   - CC5
   - CC6

6. CC7

7. Final Study Report D5 (initial)

8. Final Meeting
   - Minutes Final Meeting
   - Slides Presentation Doc D6
   - CC8

9. Final Study Report D5
   - CC9
   - Final Dataset D4

Task-1: Complementarity of fixed & mobile

Task-2: Convergence as a connectivity enabler & for backhaul

Task-3: Different coverage obligations in the MS & their effects

Task-4: QoE & QoS measurements across the MS

Task-5: Key elements of common performance standards

Task-6: Key indicators for regulators & Final Reporting
## Major intermediate deliverables within each Task

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<tr>
<th>Task</th>
<th>Task Deliverable</th>
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| 1    | **A** Analysis of origins and developments of FMC since the late 1980s, emphasising most recent  
      **B** Analysis of convergence possible, at levels of services, infrastructure & markets  
      **C** Substitution value model for switching (motivational analysis)  
      **D** Five scenarios on various options /conditions of FMC &FMS, illustrating consequences |
| 2    | **A** Three brief scenarios of the potential roles of existing and future fixed networks in supporting future small cell / other relevant radio n/ws for backhaul connectivity.  
      **B** Assessment of demand based on commercial market and public service requirements with the relevant technical parameters for network engineering. estimate, in quantitative terms, probability, from complementarity, of existing fixed network use for future backhaul demands for dense small cell n/ws |
| 3    | **A** Quantitative analysis of the results in terms of ranking of coverage obligations and their apparent success (considering size of small sample field ).  
      **B** Qualitative assessment of the various coverage obligation methods and their relative success |
| 4    | **A** 2 comparison tables – for QoS and one for QoE across the EU MS, comparing quantitative measures of parameters available across all MS, eg BER, voice quality + qualitative  
      **B** identify commonalities for regional harmonisation & new approaches to QoE / QoS evaluation |
| 5    | **A** Create a consistent and harmonised approach to network performance indicators for mobile and fixed ECC services – especially for ECC outside Universal Service Directive for a weighted quantitative table of parameters preferred across the EU MS examined with a weighting  
      **B** Qualitative assessment of the parameters sets’ strengths/weaknesses, with recommendations on the optimal choices for Europe to gain common acceptance. |
| 6    | **A** Select optimal set of KPI indicators for network performance and reliability for MS NRAs’ use and compare with those for overseas NRAs  
      **B** Produce Draft Final Report and all final deliverables. |
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Thank You
The detailed questions

1. What are the differences in mobile coverage measurements among the Member States?
2. What are the effects of policy measures like coverage obligations and what insights can be gained for their further use and development to improve connectivity in Europe?
3. What are the technical/political/economic obstacles that prevent the definition of common coverage metrics in the EU [1] - for instance broadly accepted ways of measuring connectivity parameters like download or upload speeds across the Member States?
4. To advance understanding of the metrics for comparable and generally accepted quality of service (QoS) and quality of experience (QoE), what are the optimal measurement approaches, especially in the context of radio-based connectivity?
5. What other measurement approaches are used to support related policy measures - such as those driving urban and rural take-up of broadband?
6. What is the impact of fixed-mobile convergence (FMC) in the Member States in terms of Internet connectivity, broadband take-up and the use of fixed line services?
7. What is FMC’s current state of play?
8. How has FMC evolved – and what does an analysis of FMC in Europe show over time – at service, infrastructure and market levels? Evidence must be gained on how the current degree of substitution has been arrived at, to inform the Digital Single Market strategy and thus how goals for internet access can be achieved.
9. What are the barriers to FMC? More specifically, how does a lack of coverage contribute and are there other factors, and what practical measures could provide a solution?
10. What future trends in FMC could improve connectivity in Europe?

[1] Using the data collection and the initial analysis and recommendations of SMART 2014/0016.
Deliverables in further detail

1. **Analysis of EU fixed-mobile convergence at service, infrastructure and market level:**
   - Highlight future trends that can improve connectivity in Europe.
   - Assess to what degree fixed and mobile networks are complementary and when mobile networks can still be seen as a substitute especially in terms of pricing and quality.
   - Taking the service, infrastructure and market levels into account, show how fixed and mobile convergence has evolved so far and will likely further evolve in the future.

2. **Assessment of the extent that convergence between fixed and mobile will be a key enabler to meet new connectivity needs** - including potential of access to fixed networks for mobile backhaul in the context of network densification through rollout of small cells and similar measures.

3. **Complement the EU Integrated Platform under development by the Mapping Study (phase II):** Mapping of Broadband Services in Europe (SMART 2014/0016).

4. **Support for EU policy-making process** by providing a clear understanding of difference of coverage measurements among Member States and other measurement approaches.

5. **Assessment of technical/political/economic obstacles that prevent definition of common coverage measurements** (e.g., broadly accepted ways of measuring connectivity parameters such as download or upload speeds) in the EU, based on the collection, initial analysis and recommendations of SMART 2014/0016.