

**MoU regarding  
Harmonisation of a Charging Capability  
for Mobile Phones**

**June 5<sup>th</sup>, 2009**

## 1. Introduction

1.1 This MoU defines measures to be taken by the Signatories to allow Mobile Phones to be charged through a common charger interface agreed by the Signatories, thus addressing today's typical incompatibility of chargers.

1.2 It is anticipated that this will provide a significant increase in user convenience and a significant reduction of the environmental impact of redundant chargers compared with the current situation.

## 2. Definitions

For the purpose of this MoU:

2.1. A 'Mobile Phone' is a battery-powered handheld communication device of which the primary purpose is voice telephony, which operates on public cellular networks, which potentially supports other services and which is designed to be hand-portable.

It meets the following characteristics:

2.1.1 Mechanical construction of device is pocket-format (e.g. dimensions below 170 x 100 x 45 mm)

2.1.2 Communication is primary usage with Incoming Call Override based on presence of an Identification Module (e.g. SIM or USIM)

2.1.3 Which is powered by a 3.6/3.7 V battery based on current Li-Ion cells with a capacity ranging from 400 to 2000 mAh

2.1.4 Supports USB user data handling as defined in "Universal Serial Bus Specification" Revision 2.0 April 27th 2000 and later engineering changes notices by the USB Implementers Forum.

It is recognised that certain unusual designs of mobile phone will not fall in the definition of Mobile Phone, for example very small devices not normally pocketed.

This definition is subject to the regular review in article 4.5.

2.2 An 'EPS' (External Power Supply) is a mains-powered source which enables charging circuits in a separate device to charge the battery in that device.

2.3 'Micro-USB' is a connector (B-Plug and B-Receptacle) which can be used for charging support and additional functions, whose reference specification is "Universal Serial Bus Cables and Connector Class Document" Revision 2.0 August 2007, by the USB Implementers Forum. These additional functions are not the subject of this MoU.

2.4 A 'Common EPS' is an EPS which meets the requirements of the specifications and standards which will be developed under article 4.1 and as may be revised under article 4.5.

The specifications are expected to include:

2.4.1 A Micro-USB B-Plug attached via a cable which delivers power to the device being charged.

2.4.2 A voltage supplied of 5.0 V +/- 5%.

2.4.3 A maximum output current delivered of between 500 mA and 1500 mA.

2.4.4 The EPS must be a Limited Power source in accordance with EN60950-1 clause 2.5

It is recognised that certain EPSs may have the capability to recognise connection to certain Mobile Phones and in such cases operate outside the above specification; such capability shall not indicate that such an EPS is not a Common EPS

2.5 An "Adaptor" is defined as a device with a Micro-USB receptacle/plug connecting to a specific non Micro-USB connector. For clarification: an Adaptor can also be a cable.

2.6 'Preferred Charging Rate' is defined as charging a battery from 10% capacity to 90% capacity within a maximum of 6 hours..

### 3. MoU Considerations

3.1 The Signatories note that the Micro-USB connector is already used by some manufacturers as an interface to provide charging support for Mobile Phones and other portable electronic devices. It is likely that this initiative will further increase the use of this connector.

3.2 The Signatories note that it is essential that the consumer and other stakeholders are protected from the consequences of using EPSs and Mobile Phones which may not function correctly when used together. In particular:

3.2.1 The user shall be protected from unsafe or incorrect operation of mobile phone / EPS combinations.

3.2.2 It is important that manufacturers of both Mobile Phones and EPSs shall provide user information which allows the user to understand compatibility issues, such as a statement of compliance to relevant standards and a notice of intended purpose.

3.2.3 The wide range of battery capacities and output currents of EPS's in the market means that:

- a Common EPS with an output current at the low end of the specification in article 2.4 may charge a battery at the high end of the specification in article 2.1 more slowly than the Preferred Charging Rate, and
- a Common EPS with an output current at the high end of the specification in article 2.4 may cause a Mobile Phone with a battery capacity at the low end of the specification in article 2.1 to cease charging, to charge more slowly than the Preferred Charging Rate or not to charge (for example to avoid overheating of the phone or battery).

3.2.4 For Mobile Phones the EPS must be LVD and EMC compatible, in particular it must be sufficiently immune to function correctly in the field strengths in the vicinity of the Mobile Phone's antenna, and should be covered by harmonised product standards for EPS intended to be used with mobile phones.

3.2.5 The existing EMC harmonised standard covering the combination of Mobile Phones and EPS may need revision, as indicated, in article 4.1. For the avoidance of doubt and notwithstanding this MoU, manufacturers supplying both Mobile Phones and Micro-USB EPSs may continue to use the existing standard or a later revised one, to demonstrate compliance to the EMC requirements.

3.3 The Signatories note that the Mobile Phone market is global, and that the objective of this MoU is unlikely to be satisfactorily met by mechanisms which are not valid on a global basis. Therefore, where possible, technical and/or regulatory steps should not be taken which will result in fragmentation of the Mobile Phone market globally.

3.4 The Signatories note that this MoU should not preclude innovation in the Mobile Phone and EPS markets, for example in relation to battery and charging technologies, new interfaces, multi-modal charging capabilities and improved environmental or charging performance. Therefore a review process is necessary to adapt this MoU and to address the impact of such changes on the related specifications and standards.

Industry should continue to provide a common charging interface as defined by this MoU, unless such technology innovations cause such to be not viable from a technical, economic, social or environmental perspective.

### 4. MoU Undertakings

Accordingly the Signatories:

4.1 Undertake to work with the Signatories, together with relevant bodies such as the European Commission, the European Standardisation Organisations, recognized international standards development organizations and possible others, to define a set of technical specifications based on charging capability with a Micro-USB interface with the purpose of achieving the goals in article 1, and to propose the resulting specifications for appropriate formal standardization as soon as complete.

4.1.1 These technical standards shall include harmonised standards under the EMC and LVD Directives to provide for the separate certification of Mobile Phones and of EPS marketed for use with Mobile Phones (including Common EPSs).

4.2 Undertake, subject to the satisfactory completion of the activities described in article 4.1, including successful standardisation as required, to ensure their Mobile Phones are capable of being charged at the Preferred Charging Rate by any EPS meeting the requirements of a Common EPS.

4.2.1 In order that compatibility of as many Mobile Phones as possible with a Common EPS may be enabled, if a manufacturer makes available an Adaptor from the Micro-USB connector of a Common EPS to a specific non-Micro-USB socket in the Mobile Phone, it shall constitute compliance to this article.

4.2.2 As described in article 3.2.3, certain combinations of Mobile Phone and Common EPS may not meet the requirements in this article; this shall not constitute a breach of this MoU.

4.2.3 As described in article 3.4, in the event that relevant innovation is not reflected in updates to this MoU as described in article 4.5, or if the related standards and specifications change outside their control, Signatories retain the right to place Mobile Phones & EPSs on the market which do not meet the requirements of this article.

4.3 Undertake, subject to the satisfactory completion of the work described in article 4.1, to ensure that each EPS equipped with a Micro-USB connector placed by them on the market for use with Mobile Phones is a Common EPS.

For the avoidance of doubt, this MoU does not preclude the supply of an EPS which has a specific non-Micro-USB connector provided the Mobile Phone with which it is intended to be used can also be charged with a Common EPS under Article 4.2.

4.4 Undertake to include in Mobile Phone product documentation a statement of compliance to the technical standards to be defined in article 4.1, with the intention to allow the user to recognise, in conjunction with the EPS vendors' declaration of intended purpose and statement of compliance to the technical standards being defined in article 4.1, which EPS may, or may not, be used with their Mobile Phone.

4.5 Undertake to establish a process for the review of this MoU on a regular basis in DigitalEurope, and to adapt the MoU to the state of the art to ensure a continued sufficient coverage of products in the market.

4.6 The territory to which this MoU shall apply is the European Union

## **5. Introduction Schedule**

5.1 Definition of the set of technical specifications covering charging interoperability with a Micro-USB interface to be met 6 month after signing this MoU.

5.2 The Signatories will work with appropriate SDOs as may be mandated by the European Commission to work on regulatory standards aspects from the date of that mandate.

5.3 The Signatories will progressively introduce the new standards in new Mobile Phones & Micro-USB EPSs appearing on the market after 01/01/2010 dependent on the related standards being available in time to permit any required design and testing changes.

5.4 All new Mobile Phone models and new EPS models on the market produced by the Signatories shall offer this common charging capability one year after the related standards have become available.

**6. Termination**

6.1 The Signatories retain the right to withdraw from this MoU at any time with immediate effect. In this event, notice shall be given to DigitalEurope and the European Commission.

6.2 This MoU terminates by 31/12/2012.

**7. Signature**

The undersigned commit to progress this issue with the aim that the charging solution described herein is brought to market within the schedule provided.

The Signatures should be of the enterprises not of the individuals.

Signed for and behalf of:

[The Company]

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Signature to be filed with

DigitalEurope,



and

European Commission, DG Enterprise:

