

# **BLUE ANGEL**

**The German Ecolabel**



**Mobile Phones**

**DE-UZ 106**

**Basic Award Criteria**

**Edition July 2017**

**Version 2**

## The Environmental Label is supported by the following four institutions:



The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.



The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.



The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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**This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.**

# 1 Introduction

## 1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

## 1.2 Background

Today, it is hard to imagine a world without mobile phones as means of communications. According to the Federal Statistical Office the number of mobile phones used in Germany was 66 million in 2016. This corresponds to a level of equipment ownership of 1.8 mobile phones per household. This great number is particularly important because the manufacture of the devices requires great amounts of resources. Mobile phones contain a variety of critical raw materials which - on the one hand - cause environmental problems during mining and - on the other hand - often cannot be recycled in sufficient quantities. Just like many other ICT devices mobile phones are manufactured under cost pressure and their supply chains are spread around the world. As a result, now and again working conditions in the production of raw materials as well as in the manufacture are not up to international standards.

Their particularly long-lived design and the resulting low use of resources enable Blue Angel eco-labelled devices to take up these challenges. The devices can be efficiently recycled and the manufacturers operate efficient take-back schemes to make sure that a large part of the resources in mobile phones can actually be returned to the production cycle. As regards the conflict resources, the manufacturers of the mobile phones assume their corporate responsibilities and make sure that the devices are manufactured in a socially acceptable manner.

In addition, Blue Angel eco-labelled devices meet criteria of precautionary health protection. The results of Deutsches Mobilfunk Forschungsprogramm (DMF) (German Mobile Telecommunication Research Programme) – a programme co-financed by the German Bundesumweltministerium (Federal Ministry for the Environment) and the mobile network operators present in the German market do not, on the whole, give reason to doubt the protective effect of limits for electromagnetic radiation and are consistent with other countries' research programmes. Nevertheless, the hints from various studies<sup>1</sup> suggest that children may be differently and possibly more exposed than adults - and the question that has not yet been fully answered regarding the health risks of long-term exposure to radio waves from mobile phones for both adults and, especially, for children, suggest a continued careful use of wireless

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<sup>1</sup> Deutsches Mobilfunk Forschungsprogramm (DMF) (German Mobile Telecommunication Research Programme), [http://www.emf-forschungsprogramm.de/abschlussphase/DMF\\_AB.pdf](http://www.emf-forschungsprogramm.de/abschlussphase/DMF_AB.pdf)

communications technologies. In 2011, the International Agency for Research on Cancer (IARC) classified radiofrequency electromagnetic fields as possibly carcinogenic. For this reason and for basic considerations in radiation protection according to which exposure limits should not be exhausted, these Basic Criteria include in para. 3.7 – for reasons of precaution - device requirements designed to minimize user exposure beyond the limits recommended for protection against known risks. Precautionary measures are aimed at avoiding unnecessary exposure or minimizing unavoidable exposure to the maximum possible extent.

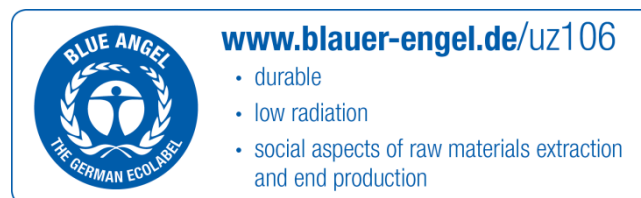
### 1.3 Objectives of the Blue Angel Eco-Label

Climate protection and the reduction of energy consumption, increased resource efficiency and the avoidance of harmful substances and waste are key objectives of environmental protection. The Blue Angel eco-label for mobile phones may be awarded to devices featuring the following environmental properties:

- Product longevity
- Low user exposure to electromagnetic radiation
- Design that supports maintenance and recycling
- High-value (secondary) batteries
- Compliance with fundamental social standards

Besides, the Blue Angel distinguishes a product whose manufacturer actively supports an improved take-back and recycling scheme.

Therefore, following benefits for the environment and health are stated in the explanatory box:



### 1.4 Compliance with Legal Standards

It is a matter of course for Blue Angel eco-labelled products to comply with applicable laws and regulations, especially with the following ones:

- WEEE Directive (2012/19/EU)<sup>2</sup>, transposed into German law by the German Elektro- und Elektronikgesetz (ElektroG)<sup>3</sup> governing the disposal of the products.
- RoHS Directive (2011/65/EU)<sup>4</sup> governing the contents of hazardous substances in the products transposed into German law by the German Elektro- und Elektronikgeräte-Stoff-

<sup>2</sup> Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) (revised version); WEEE-Directive

<sup>3</sup> Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten, Elektro- und Elektronikgerätegesetz (Act on the placing on the market, return and environmentally sound disposal of waste electrical and electronic equipment) of 20 October 2015, (Federal Law Gazette I, page 1739); ElektroG

<sup>4</sup> Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (revised version); ROHS Directive

Verordnung (ElektroStoffV)<sup>5</sup> (Ordinance on the Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment), of April 19, 2013.

- Substance requirements defined by the EU Chemicals Regulation REACH (EC/1907/2006)<sup>6</sup> and the POP Regulation (EC/850/2004)<sup>7</sup>.
- External Power Supply Regulation (EC) No 278/2009<sup>8</sup>, fixing the energy efficiency requirements for external power supplies.
- Battery Directive (2006/66/EC)<sup>9</sup> transposed into German law by the German Batteriesgesetz (BattG) (Batteries Act)<sup>10</sup>.
- Radio Equipment Directive (2014/53/EU)<sup>11</sup> (RED) transposed into German law by the Funkanlagengesetz (FuAG)<sup>12</sup> (German Radio Equipment Act).
- General Product Safety Directive (2001/95/EC)<sup>13</sup> transposed into German law by the Produktsicherheitsgesetz (ProdSG)<sup>14</sup> (Product Safety Act).

## 2 Scope

These Basic Criteria apply to mobile phones, i.e. portable, cordless phones that transmit telephone calls via mobile phone networks. The mobile phone is equipped with a module (SIM card) which allows the identification of the individual subscriber. In addition to the telephony function the mobile phone can provide several other functions, such as, for example, transmission of text messages, mobile use of Internet services, execution of programmes or recording and replay of video and audio signals. Mobile phones are also called cellular phone, cell phone, or smartphone - and many Germans call their mobile phone "handy".

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<sup>5</sup> Verordnung zur Beschränkung der Verwendung gefährlicher Stoffe in Elektro- und Elektronikgeräten (Elektro- und Elektronikgeräte-Stoff-Verordnung); ElektroStoffV (Ordinance on the Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment)

<sup>6</sup> Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

<sup>7</sup> Regulation (EC) No 850/2004 on Persistent Organic Pollutants; POP Regulation

<sup>8</sup> COMMISSION REGULATION (EC) No 278/2009 implementing Directive 2005/32/EC (formerly: 2005/32/EC) with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies; External Power Supply Regulation

<sup>9</sup> Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC; Battery Directive

<sup>10</sup> Gesetz zur Neuregelung der abfallrechtlichen Produktverantwortung für Batterien und Akkumulatoren; (Act revising the law of Waste-Related Product Responsibility for Batteries and Accumulators) Battery Act of 25 June 2009, Federal Law Gazette I, page 1582; BattG

<sup>11</sup> Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment (Radio Equipment Directive – RED)

<sup>12</sup> Gesetz zur Neufassung der Regelungen über Funkanlagen und zur Änderung des Telekommunikationsgesetzes sowie zur Aufhebung des Gesetzes über Funkanlagen und Telekommunikationsendeinrichtungen (Act redrafting the provisions on radio equipment and amending the Telecommunications Act and repealing the Act on radio equipment and telecommunications terminal equipment) of 27 June 2017 (Federal Law Gazette I p. 1947); FuAG

<sup>13</sup> Directive 2001/95/EC on general product safety.

<sup>14</sup> Gesetz über die Bereitstellung von Produkten auf dem Markt (German Act on making Products available on the Market) (Produktsicherheitsgesetz – ProdSG – Product Safety Act) of 08 November 2011.

### **3 Requirements**

#### **3.1 State-of-Charge Indicator**

The mobile phone must have an integrated charge indicator indicating the current state of battery charge during use and charging. Also, the device must show in a clear manner that the charging has been completed.

##### ***Compliance Verification***

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to the state-of-charge indicator and present the relevant pages of the product documents in Annex 2 to the Contract.*

#### **3.2 External Power Supply**

The applicant shall provide a distribution channel for the mobile phone through which the mobile phone is marketed without an external power supply.

##### ***Compliance Verification***

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract and name the distribution channel that distributes the mobile phone with an external power supply.*

#### **3.3 (Secondary) Batteries**

##### **3.3.1 Replaceability of the Battery**

The mobile phone shall be designed so as to allow the user to replace the rechargeable battery without special expert knowledge and without damaging the telephone.

The rechargeable battery (hereinafter called battery or secondary battery) means a secondary cell designed to repeatedly restore its charge state using a special purpose power supply (charging electronics) i.e. it can be recharged. The battery includes one or more cells coupled together by a housing, plastic film or in other suitable form. It may comprise electronic control units and is equipped with connecting terminals or a connecting cable. (Secondary) batteries are also called accumulators, secondary cells, accumulator packs, electrochemical energy storage systems or rechargeable batteries. For further definitions of the characteristics of secondary batteries, please see Appendix A.

##### ***Compliance Verification***

*The applicant shall declare compliance with the requirement in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to battery replacement and present the relevant pages of the product documents in Annex 2 to the Contract.*

##### **3.3.2 Battery Capacity**

The battery capacity shall be measured in accordance with paragraph 7.3.1 „Discharge performance at 20 °C (rated capacity)“ of EN 61960 standard „Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications“, as amended (current version: DIN EN 61960:2012-04). The rated



capacity (C) thus determined must be at least as high as the nominal capacity (N) indicated on the battery and in the product documents.

### **Compliance Verification**

*The applicant shall specify, in Annex 1, the rated capacity (C) measured and present a test report in Annex 3 to the Contract stating that at least three secondary batteries have been analysed and that all three meet the requirement. The test report shall be prepared by a testing laboratory meeting the general requirements of DIN EN ISO/IEC 17025 for the competence of testing and calibration laboratories. Test reports prepared by the applicant or the battery manufacturer will be accepted as equivalent if the latter use a testing laboratory that has been accredited for these measurements by an independent body as Supervised Manufacturer's Testing (SMT) Laboratory.*

### **3.3.3 Battery Marking**

The battery (or battery pack) must be marked in accordance with EN 61960 providing at least the following information:

- nominal capacity (N),
- nominal voltage,
- type designation,
- date of manufacture (may be coded).

These specifications (except for the date of manufacture) shall also be given in the product documents. In case the date of manufacture is coded the product documents shall include instructions for decoding.

In addition, the battery (or battery pack) shall be marked with an international recycling symbol as given in ISO 7000 (Graphical symbols for use on equipment) and specify the cell chemistry of the battery (e.g. Li-Ion, Ni-MH). This symbol shall be colour-coded in accordance with the recommendations of the Battery Association of Japan<sup>15</sup> or the draft IEC 62902 standard (Secondary batteries: Marking symbols for identification of their chemistry):



Colour: blue (Pantone 312)



Colour: orange (Pantone 1375)

### **Compliance Verification**

*The applicant shall declare compliance with the requirements, specify nominal capacity (in mAh or Ah), nominal voltage and type designation as well as the cell chemistry in Annex 1 to the Contract, highlight the relevant passages in the product documents that include these data*

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<sup>15</sup> Battery Association of Japan, Recycling portable rechargeable batteries, <http://www.baj.or.jp/e/recycle/recycle04.html>

and present the relevant pages of the product documents in Annex 2 to the Contract. Also, the applicant shall present (in Annex 6 to the Contract) a photo of the secondary battery that shows all of the data mentioned above.

### **3.3.4 Durability of the Battery**

The battery must achieve a minimum of 500 full charge cycles:

$$\text{full charge cycles} \geq 500$$

A full charge cycle is to be understood as the drain of a quantity of electricity (in ampere hours) from the battery to the amount of its nominal capacity (N) that has been stored in the battery by one or more charging processes.

The minimum number of full charge cycles achievable shall be specified in the product documents.

After 500 full charge cycles the battery must, in addition, have in a fully charged state, a remaining capacity ( $Q_{\text{Rem}}$ ) of at least 90 percent of the nominal capacity (N).

$$Q_{\text{Rem}} \geq 90\% * N$$

Full charge cycles shall be calculated and remaining capacity shall be measured in accordance with the requirements set out in Appendix A.

#### **Compliance Verification**

*The applicant shall - in Annex 4 - present the report on the durability test for a minimum of three batteries tested according to Appendix A documenting the resulting numbers of achieved full charge cycles of the batteries as well as the remaining capacities recorded at the end of the tests.*

*The test report shall be prepared by a testing laboratory meeting the general requirements of DIN EN ISO/IEC 17025 for the competence of testing and calibration laboratories. Test reports prepared by the applicant or the battery manufacturer will be accepted as equivalent if the latter use a testing laboratory that has been accredited for these measurements by an independent body as Supervised Manufacturer's Testing (SMT) Laboratory.*

*In addition, the applicant shall, in Annex 1 to the Contract, specify the minimum number of full charge cycles achievable, highlight the relevant passages documenting this figure in the product documents and present the respective pages of the product documents in Annex 2 to the Contract.*

### **3.3.5 Battery Safety**

The batteries must meet the test requirements of EN 62133-2 "Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems", as amended.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 and present a test report in Annex 5 stating that the battery and the cells used meet the test requirements of EN 62133-2, as amended. The test report shall be prepared by a testing laboratory meeting the*

*general requirements of DIN EN ISO/IEC 17025 for the competence of testing and calibration laboratories. Test reports prepared by the applicant will be accepted as equivalent if the latter uses a testing laboratory that has been accredited for these measurements by an independent body as Supervised Manufacturer's Testing (SMT) Laboratory.*

### **3.4 Longevity**

#### **3.4.1 Warranty**

The applicant undertakes to offer a free minimum 2-year warranty on the mobile phone, except for the batteries.

In addition, the applicant shall offer a free minimum 1-warranty on the battery which covers a remaining capacity of at least 90%, provided that the phone is properly used and charged with the manufacturer's own or another suitable charging device.

The product documents shall provide details of such warranties.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to the warranties offered and present the relevant pages of the product documents in Annex 2 to the Contract.*

#### **3.4.2 Availability of Spare Parts and Repair**

The applicant undertakes to make sure that the availability of spare parts for device repair is guaranteed for at least 3 years from the time that production ceases. Spare parts shall be offered at reasonable prices by the manufacturer itself or a by third party.

Spare parts are those parts which, typically, may fail or break down within the scope of the ordinary use of a product, especially batteries, displays and front glasses.

The mobile phones shall be so designed as to enable qualified specialist workshops to replace such spare parts with reasonable effort.

The product documents shall provide information on spare parts supply and repair services.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to the spare parts supply and present the relevant pages of the product documents in Annex 2 to the Contract.*

#### **3.4.3 Software Updates**

The device shall come with a free function to allow the user to update the operating system. The aim of these updates is, above all, the closing of security holes, as well as other software updates, if applicable. The applicant undertakes to offer security updates for the operating system of the mobile phone to be eco-labelled for at least 4 years from the time that production ceases.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to the software updates and present the relevant pages of the product documents in Annex 2 to the Contract.*

#### **3.4.4 Data Deletion**

To allow reuse of the device it shall be designed so as to enable the user to completely and securely delete all personal data without the help of pay software. This can be accomplished by either physically removing the memory card or the use of free manufacturer-provided software. As an alternative to removing the data, it shall also be possible to encode the personal data on the data medium by means of software provided, thus allowing a secure deletion of the key.

In addition, the device shall include a software function that resets the device to its factory settings.

The product documents shall include detailed instructions on how to securely delete data and how to reset the device to its factory settings.

**Note:** It shall not be possible to restore the personal data by means of commercially available recovery software tools that are used on the intact mobile phone or, where necessary, with the help of another computer.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to data deletion and the function to reset the device to its factory settings and present the relevant pages of the product documents in Annex 2 to the Contract.*

### **3.5 Take Back and Recycling**

#### **3.5.1 Take Back**

The applicant shall operate its own take-back scheme for mobile phones to direct all collected devices to reuse or professional recycling. The applicant shall actively communicate this system to its customers. This take-back scheme can be based on collections at the branches, return campaigns, deposit systems or the like. A mere reference to the collection governed by the Elektro- and Elektronikgesetz (ElektroG) (Electrical and Electronic Equipment Act) would not be sufficient. The collection system can be organised by the applicant itself, by contracting partners and/or together with other manufacturers of mobile phones.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 and provide information on type and organisation of the collection system in Annex 7. In addition, the applicant shall annually report to RAL GmbH the amount of devices collected (number of used mobile phones collected by applicant during the previous year) (form of Annex 8 to the Contract).*

### 3.5.2 Recyclable Design

An efficient removal of the secondary batteries for recycling purpose shall be possible with no special knowledge being required (guidance value: in no more than 5 seconds). The battery chemicals must be prevented from leaking during the removal.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract.*

### 3.6 Material Requirements

#### 3.6.1 Plastics used in Housings and Housing Parts

The plastics used in housings and housing parts must not contain, as constituent components, any substances with the following characteristics<sup>16</sup>:

1. Substances that have been identified as substances of very high concern according to Regulation (EC) No 1907/2006) (REACH6) and have been included in the list (so-called Candidate List) set up in accordance with REACH, Article 59(1).<sup>17</sup>.
2. Substances that have been classified according to the CLP Regulation<sup>18</sup> in the following hazard categories or meet the criteria for such classification<sup>19</sup>:
  - ♦ carcinogenic of category Carc. 1A or Carc. 1B
  - ♦ mutagenic of category Muta. 1A or Muta. 1B
  - ♦ reprotoxic of category Repr. 1A or Repr. 1B

Halogenated polymers shall not be permitted in housings and housing parts. Nor may halogenated organic compounds be added as flame retardants. Nor shall any flame retardants be permitted which are classified under the CLP Regulation as carcinogenic of Category Carc. 2 or as hazardous to waters of Category Aquatic Chronic 1.

The hazard statements (H-phrases) assigned to the hazard categories can be seen from Appendix 2: „Assignment of Hazard Categories and Hazard Statements“.

The following shall be exempt from this requirement:

- fluoroorganic additives (as, for example, anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed 0.5 weight percent;
- plastic parts weighing 10 grams or less, where - with regard to multiple part housings - the total weight of all parts made of the same plastic shall be the decisive factor in determining the mass.

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<sup>16</sup> Constituent components are substances added to the product as such or as an ingredient of mixtures which continue to be there unchanged in order to achieve or influence certain product properties. They do not include, for example, minimized residual monomers.

<sup>17</sup> The Candidate List, as amended at the time of application, shall be applicable. For the current version, please go to: [REACH-Kandidatenliste](#).

<sup>18</sup> Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (short: CLP), replacing the old Directives 67/548/EEC (dangerous substance directive) and 1999/45/EC (dangerous preparations directive).

<sup>19</sup> The list of harmonised classification and labelling of hazardous substances is included in Part 3 of Annex VI to the CLP Regulation. Moreover, a comprehensive classification and labelling inventory is publicly accessible via the website of the European Chemicals Agency ECHA which also includes all manufacturer-provided self-classifications of hazardous substances: [ECHA Einstufungs- und Kennzeichnungsverzeichnis](#).

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract and present a list of the housing plastics used according to Annex P-L 10 for all housing parts weighing more than 10 grams. Also, the applicant shall submit a written declaration from the plastic manufacturers or ensure the submission of such declaration to RAL gGmbH for all parts appearing on said list. Such declaration shall confirm that the banned substances have not been added to the plastics and give the chemical designation of the flame retardants used, including CAS No. and classifications (H statements) (Annex P-M to the Contract). When first applying for the Blue Angel eco-label the declaration submitted must not be older than 6 months. If one applicant files additional applications for the eco-labelling of products containing the same plastics the declarations submitted may be presented unchanged during the term of the Basic Criteria. Notwithstanding this, RAL shall be entitled to ask for an updated version of the declarations if the Umweltbundesamt (Federal Environmental Agency) finds that product-relevant substances have been added to the Candidate List.*

#### **3.6.2 Use of Biocidal Silver**

The use of biocidal silver on touchable surfaces shall not be permitted.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract.*

#### **3.7 Electromagnetic Radiation**

Devices to be Blue Angel eco-labelled shall be designed so as to make sure that - when used at the ear - the specific absorption rate (SAR) induced by the radio-frequency electromagnetic radiation emitted does not exceed 0.5 watts per kg and - when used near the body - 1.0 watt per kg - locally averaged over 10 grams of tissue.

### **Compliance Verification**

*The maximum SAR for use at the ear shall be determined in accordance with DIN EN 62209-1 and the maximum SAR for use in close proximity to the human body shall be determined in accordance with DIN EN 62209-2. In both cases the maximum SAR shall be determined taking into account the conditions of use that can reasonably be anticipated, including the simultaneous operation of the radio interfaces provided by the device and without any distance between device and body phantom.*

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract and submit the test report prepared by an independent testing laboratory in Annex 9. The test report shall be prepared by a testing laboratory that meets the general requirements for the competence of testing and calibration laboratories under DIN EN ISO/IEC 17025 and has been accredited for measurements according to DIN EN 62209-1 and DIN EN 62209-2. Laboratories charged with performing the testing must be affiliated to a notified body<sup>20</sup> - notified by Bundesnetzagentur (Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railways) in accordance with Directive 2014/53/EU (RED - Radio Equipment Directive)<sup>21</sup>*

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<sup>20</sup> [http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=uriserv%3AOJ.L\\_.2014.153.01.0062.01.DEU](http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=uriserv%3AOJ.L_.2014.153.01.0062.01.DEU)

<sup>21</sup> See footnote No 11.

### **3.8 Additional Functions**

The mobile phone must provide the technical tools needed to make phone calls without holding the mobile phone close to ear or mouth.

To achieve this aim the mobile phone

1. must be equipped with an interface for connecting a headset (combination of headphones and microphone) and
2. offer a speakerphone function.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract, highlight the relevant passages in the product documents that make reference to the headset interface as well as to the speakerphone function and present the relevant pages of the product documents in Annex 2 to the Contract.*

### **3.9 Social Corporate Responsibility**

#### **3.9.1 Due Diligence for Conflict Minerals**

As regards the conflict minerals used in mobile phones, such as tin, tantalum, tungsten and their ores as well as gold the applicant shall perform its corporate due diligence by complying with the „OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas“<sup>22,23</sup>.

The applicant shall present a list of the components that contain the predominant mass fraction in relation to the respective conflict mineral. The applicant shall name the supplier and the respective supply chain scheme or project for each component to ensure responsible sourcing of conflict minerals used in the mobile phone.

In addition, the applicant shall support at least one of the initiatives listed in Appendix C which promotes responsible sourcing and trading of the above-mentioned minerals in line with OECD Guidance.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 and present, in Annex 10, the components list required, make a declaration of compliance with human rights due diligence and name the applicant-supported initiatives which promote responsible sourcing and trading of tin, tantalum, tungsten and gold. In addition, the applicant shall present, in Annex 10a, a report describing the measures taken by applicant to exercise due diligence as well as, in Annex 10b, a confirmation by the initiatives supported describing the type of contribution. The report in Annex 10a shall describe measures taken not more than 12 months prior to filing the application. The confirmation by the supported initiatives in Annex 10b must not be older than 12 months from the date of filing the application.*

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<sup>22</sup> OECD-Leitsätze für die Erfüllung der Sorgfaltspflicht zur Förderung verantwortungsvoller Lieferketten für Minerale aus Konflikt- und Hochrisikogebieten (Translated into German by the Bundeswirtschaftsministerium (BMWi) (Federal Ministry for Economic Affairs and Energy), [http://www.bmwi.de/Redaktion/DE/Downloads/M-O/oecd-leitsaetze-fuer-die-erfuellung-der-sorgfaltspflicht.pdf?\\_\\_blob=publicationFile&v=1](http://www.bmwi.de/Redaktion/DE/Downloads/M-O/oecd-leitsaetze-fuer-die-erfuellung-der-sorgfaltspflicht.pdf?__blob=publicationFile&v=1)

<sup>23</sup> OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas: Third Edition, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264252479-en>

### 3.9.2 Working Conditions

Fundamental principles and universal human rights as stipulated by the applicable core labour standards of the International Labour Organisation<sup>24</sup> (ILO) must be observed during the final assembly of Blue Angel eco-labelled products.

Employee rights and benefits shall apply to all forms of employment, including atypical forms of employment, such as part-time work, piecework, seasonal workers or home workers as well as to employees of subcontractors and those employed by subcontract.

All workers shall receive a written employment contract that is in line with the legal provisions.

The applicant shall ensure compliance with the following core labour standards:

- i) Conventions against child labour:
  - ♦ Minimum Age Convention, 1973 (No. 138)
  - ♦ Worst Forms of Child Labour Convention, 1999 (No. 182)
- ii) Conventions against forced and compulsory labour:
  - ♦ Forced Labour Convention, 1930 (No. 29) and the protocol of 2014 to the Forced Labour Convention
  - ♦ Abolition of Forced Labour Convention, 1957 (No. 105)
- iii) Freedom of association and the right to collective bargaining:
  - ♦ Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
  - ♦ Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
  - ♦ If the ILO core labour standards on freedom of association and collective bargaining are not or only insufficiently implemented due to national framework conditions the companies shall provide evidence of their efforts and achievements in supporting freely elected and true workers' representations by presenting relevant documentations in order to verify that concrete measures have been taken to allow independent observers to monitor elections and that measures have been taken to promote a constructive dialogue between workers/workers' representations and the management.
- iv) Conventions against discrimination:
  - ♦ Equal Remuneration Convention, 1951 (No. 100)
  - ♦ Discrimination (Employment and Occupation) Convention, 1958 (No. 111)

In addition to the ILO core labour standards compliance with the following additional ILO conventions shall be ensured during the final assembly:

- v) Adequate hours of work and remuneration:
  - ♦ Hours of Work (Industry) Convention, 1919 (No. 1)
  - ♦ Minimum Wage Fixing Convention, 1970 (No. 131)
  - ♦ Living wages: The applicant shall make every effort that wages paid for a standard working week at least meet legal or industry standards and are always sufficient to meet the basic needs of personnel and provide some discretionary income.
- vi) Protection of health and safety:
  - ♦ Occupational Safety and Health Convention, 1981 (No. 155)
  - ♦ Chemicals Convention, 1990 (No. 170) (Convention concerning Safety in the use of Chemicals at Work).

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<sup>24</sup> ILO Core Labour Standards,  
<http://www.ilo.org/berlin/arbeits-und-standards/kernarbeitsnormen/lang--de/index.htm>



## **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 and describe in a declaration on compliance with the working conditions (in Annex 11) how the requirements regarding the respective protection aims i) to vi) are met in the manufacturing plants. Compliance shall be audited by independent third parties on the basis of the SA8000 Standard<sup>25</sup>, the EICC Code of Conduct or equivalent guidelines. Also, the applicant shall provide, in Annex 11, a list of the manufacturing plants and specify the respective date or period of audit. The applicant shall present, in Annex 11a, for at least one of these manufacturing plants an audit report on compliance with the protection aims - where the end of the audit period must not date back more than 12 months when filing the application. With respect to all other manufacturing plants the applicant shall declare that additional audit reports will be presented for as long as the label is used - should RAL gGmbH request such a report at random.*

### **3.10 Operating Instructions**

The product documents included with the devices shall include both the technical specifications and the user information relating to environment and health. They shall be either installed on the mobile phone, easily accessible on the Internet or supplied as a data medium or in printed form together with the device. The product documents shall include and manufacturer's website shall allow easy access to the following basic user information:

1. Information on the significance and correct interpretation of the state-of-charge indicator (cf. para. 3.1).
2. Instructions to disconnect the charger from the mains upon completion of the charging process in order to reduce no-load losses.
3. Instructions that charging on non-used PCs should be avoided in order to reduce power consumption during charging.
4. Instructions for using a proper charging unit.
5. Information on how to extend the battery life.
6. Instructions for replacing the battery (cf. para. 3.3.1).
7. Specification of nominal capacity, nominal voltage and type designation of the battery as well as information on the recycling process (cf. para. 3.3.3)
8. Indication of the number of full-charge cycles achievable (cf. para. 3.3.4).
9. Information on the warranty periods for mobile phone and battery as well as on the warranty terms (cf. para. 3.4.1).
10. Information on the availability of spare parts and repair services (cf. para. 3.4.2).
11. Information on software updates (cf. para. 3.4.3).
12. Information on secure data deletion and the reset function to restore factory settings (cf. para. 3.4.4).
13. Information on environmental and resource significance of proper product disposal as well as information on the take-back scheme (cf. para. 3.5.1).
14. Information on an environmentally sound disposal at the end of use in accordance with the German Elektroggesetz (Electrical and Electronic Equipment Act) as well as instructions that

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<sup>25</sup> Social Accountability International, International Social Accountability SA8000 Standard, <http://www.sa-intl.org>

the battery should not be disposed of as normal household waste but instead should be taken to a battery collection facility.

15. Specification and explanatory information on the SAR data (cf. para. 3.7).

16. Information on how to reduce health effects from radio waves when using the mobile phone, at least by recommending the use of headset or speakerphone function (cf. para. 3.8).

### **Compliance Verification**

*The applicant shall declare compliance with the requirement in Annex 1, highlight the relevant passages in the product documents that make reference to the above Nos. 1 - 16 and present the relevant pages of the product documents in Annex 2 to the Contract.*

### **3.11 Outlook**

A future revision of these Basic Criteria is expected to further toughen the requirements for social corporate responsibility. For this purpose, additional conflict-affected ores will probably be added to the list of conflict minerals (currently: tin, tantalum, tungsten and gold) and the criteria for social working conditions (currently: final assembly plants) will have to be met by additional plants along the supply chain (e.g. component suppliers).

Also, the availability of spare parts is expected to be extended from 3 to 4 years.

## **4 Applicants and Parties Involved**

Manufacturers or distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

## **5 Use of the Environmental Label**

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2022. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2022 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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## Appendix A Determination of Battery Durability

The following definitions are used for determining battery durability:

**Rated Capacity (C):** quantity of electricity (in ampere hours) declared by the manufacturer of the cells which a single cell or composite cell can deliver during a 5-hour period when charged, stored and discharged according to the conditions specified in paragraph 7.3.1 of EN 61960 (cf. para. 3.3.2).

**Nominal Capacity (N):** quantity of electricity (in ampere hours) declared by the manufacturer of the battery or battery pack on the battery and in the product documents that is stored in the battery and can be delivered by it at a discharge current specified by the manufacturer. The nominal capacity normally equals the rated capacity. The manufacturer may, however, give a value lower than the rated capacity.

**Remaining Capacity ( $Q_{Rem}$ ):** quantity of electricity that can be withdrawn from the charged battery („Full Charge Capacity“ according to Battery System Specifications<sup>26</sup>) after performing the charge cycle test for determination of the number of achievable full charge cycles (see below). The remaining capacity decreases due to cyclization of the battery.

**Charge Cycle:** based on the EN 61960 standard a charge cycle means the charging of a battery according to manufacturer's specifications and the subsequent discharge to the end-of-discharge voltage.

**Full charge cycle:** a full charge cycle means the charging of a battery and the withdrawal of a quantity of electricity (in ampere hours) in the amount of its nominal capacity (N). The difference between a full charge cycle and the charge cycle under EN 61960 is that a charged cycle is not defined by reaching the end-of-discharge voltage but by the quantity of energy withdrawn which is specified by the nominal capacity (N). A full charge cycle can require more (or less) than one charge cycle.

### Preparation of the Test

1. Determination of the rated capacity (C) in accordance with EN 61960, para. 7.3.1 "Discharge performance at 20 °C (rated capacity)" in an ambient temperature of 20 °C
2. Determination or specification of the nominal capacity (N),
3. Full discharge of the battery to the end-of-discharge voltage.

### Performance of the Tests

The tests shall be carried out on a minimum of three batteries in accordance with the sample size specified in EN 61960. All three batteries must meet the requirements listed herein.

Charge and discharge currents, ambient temperature and the respective periods of rest shall be carried out in accordance with EN 61960, para. „7.6.2 Endurance in cycles at a rate of 0.2  $I_t$  A“.

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<sup>26</sup> Smart Battery System Specifications, Smart Battery Data Specification, Revision 1.1, <http://smartbattery.org/specs/sbdat110.pdf>

- **Charge Cycle Test**

1. Charging of the battery,
2. Period of rest after charge,
3. Discharging of the battery,
4. During discharge: measurement of the quantity of electricity delivered ( $Q_i$ ),
5. Period of rest after discharge.

The charge and discharge process shall be repeated (at 1.) at least until the total quantities of electricity delivered ( $Q_i$ ) reach at least 500 times the amount of the nominal capacity (N):

$$\sum_{i=1}^n Q_i \geq 500 * N [Ah]$$

During the test cycle the quantities of electricity delivered ( $Q_i$ ) must not fall below 75% of the original nominal capacity (N). Otherwise, the test shall be considered failed.

That is, the following shall apply to each cycle i:

$$Q_i \geq 75\% * N ; i = \{1, \dots, n\}$$

- **Determination of the Remaining Capacity**

Following performance of the above-described cycle test the battery's remaining capacity ( $Q_{Rem}$ ) shall be determined:

1. Maximum charging of the battery according to manufacturer's specifications,
2. Period of rest after charge,
3. Discharge of the battery to the end-of-discharge voltage,
4. During discharge: measurement of the quantity of electricity delivered. This quantity of charge recovered is called remaining capacity ( $Q_{Rem}$ ).

For compliance with the requirements for award of the Blue Angel eco-label the remaining capacity ( $Q_{Rem}$ ) thus measured must be at least 90 percent of the original nominal capacity (N)

$$Q_{Rem} \geq 90\% * N.$$

Compliance with this requirement shall also be a prerequisite for determining the number of full charge cycles, as described hereunder.

- **Determination of the Number of Full Charge Cycles**

In order to be able to determine the number of full charge cycles the remaining capacity ( $Q_{Rem}$ ) after the above-described cycle test must be at least 90 percent of the original nominal capacity (N) (see preceding condition). The number of full charge cycles shall be calculated as the quotient of the total of the quantities of electricity delivered which has been achieved in the cycle test ( $Q_i$ ) and the nominal capacity:

$$\text{Full charge cycles} = \frac{\sum_{i=1}^n Q_i}{N}$$

- **Simplified Calculation Rule**

If the number of charge cycles that can be reached by the battery has been performed using a cycle test according to EN 61960 (para. 7.6 Endurance in Cycles) or a comparable method providing for a cyclic maximum charging of the battery and the discharge of the battery to the end-of-discharge voltage a simplified calculation method can be used to calculate the number of full charge cycles. Here, too, the method can only be used if, following performance of the cycle test, the remaining capacity ( $Q_{\text{Rem}}$ ) amounts to at least 90 percent of the original nominal capacity (N).

The number of full charge cycles can be calculated in a simplified way by multiplying the number of charge cycles achieved by the cycle test with the quotient of the average quantity of electricity delivered ( $Q_{i\_average}$ ) and nominal capacity (N):

$$\text{Full charge cycles} = \text{Charge cycles} * \frac{Q_{i\_average}}{N}$$

- **Documentation of the Tests**

The test protocol shall at least include the following information:

- ♦ Name of the testing laboratory
- ♦ Confirmation of the testing laboratory's competence
- ♦ Name of the test method (e.g. EN 61960)
- ♦ For each of the three batteries tested:
  - Nominal capacity (N),
  - Remaining capacity ( $Q_{\text{Rem}}$ ) following performance of the test,
  - Number of full charge cycles achieved,
  - If the simplified method of calculation is used: average quantity of electricity delivered ( $Q_{i\_average}$ ).

## Appendix B Assignment of Hazard Categories and Hazard Statements

The following table assigns the respective hazard statements (H statements) to the hazard categories of the substances generally excluded.

### CLP Regulation (EC) No 1272/2008

Hazard Category	H Code	Hazard Statements - Wording
<b>Carcinogenic Substances</b>		
Carc. 1A Carc. 1B	H350	May cause cancer.
Carc. 1A Carc. 1B	H350i	May cause cancer by inhalation.
Carc. 2	H351	Suspected of causing cancer.
		Mutagenic Substances
Muta. 1A Muta. 1B	H340	May cause genetic defects.
<b>Reprotoxic Substances</b>		
Repr. 1A Repr. 1B	H360D	May damage the unborn child.
Repr. 1A Repr. 1B	H360F	May damage fertility.
Repr. 1A Repr. 1B	H360FD	May damage fertility. May damage the unborn child.
Repr. 1A Repr. 1B	H360Df	May damage the unborn child. Suspected of damaging fertility.
Repr. 1A Repr. 1B	H360Fd	May damage fertility. Suspected of damaging the unborn child.
<b>Environmentally Hazardous Substances</b>		
Aquatic Chronic 1	H410	Very toxic to aquatic life with long lasting effects.

## **Appendix C Initiatives promoting Responsible Sourcing and Trading of Conflict Minerals**

- Name of the Initiative: Conflict-Free Tin Initiative (CFTI)  
Mineral: Tin  
Website: [solutions-network.org/site-cfti](http://solutions-network.org/site-cfti)
- Name of the Initiative: Solutions for Hope (SfH)  
Mineral: Tantalum  
Website: [solutions-network.org/site-solutionsforhope](http://solutions-network.org/site-solutionsforhope)
- Name of the Initiative: International Tin Research Institute  
Tin Supply Chain Initiative (iTSCi)  
Mineral: Tin, tantalum and tungsten  
Website: [www.itri.co.uk/itsci/frontpage](http://www.itri.co.uk/itsci/frontpage)
- Name of the Initiative: Conflict-Free Smelter Program (CFSP)  
Mineral: Tin, tantalum, tungsten and gold  
Website: [www.conflictreesourcing.org](http://www.conflictreesourcing.org)
- Name of the Initiative: Fairtrade Gold  
Mineral: Gold  
Website: [www.fairtrade-deutschland.de/produkte-de/gold/hintergrund-fairtrade-gold.html](http://www.fairtrade-deutschland.de/produkte-de/gold/hintergrund-fairtrade-gold.html)
- Name of the Initiative: Fairmined Standard  
Mineral: Gold  
Website: [www.fairmined.org/de/the-fairmined-standard](http://www.fairmined.org/de/the-fairmined-standard)

As of: March 31, 2017

The list of initiatives can be extended following the monitoring of other appropriate initiatives.