

The certification body of TÜV Informationstechnik GmbH
hereby awards this certificate to the company

**Haier Innovation Design Center
Haier Industrial Park No.1 Haier Road
266101 Qingdao, P. R. China**

to confirm that the usability engineering process consisting
of the sub-processes

**User Research, User Interface
Design, UX Evaluation**

fulfils all requirements of the criteria

ISO 9241-210:2010.

The requirements are summarized in the appendix to this
certificate.

The appendix is part of the certificate and consists of 5 pages.

The certificate is valid only in conjunction with the corresponding
evaluation report until 2016-12-31.



Certificate-Registration-No.:
TUVIT-TPCS5121.14

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Voluntary Validation
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Certificate

Certification System

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The certification body of TÜV Informationstechnik GmbH performs certification on the basis of the following product certification system:

- German document: “Zertifizierungsschema für TÜViT Trusted-Zertifikate der Zertifizierungsstelle TÜV Informationstechnik GmbH”, version 1.0 as of 2010-05-18, TÜV Informationstechnik GmbH

Evaluation Report

- “Assessment of conformity of the Haier Innovation Design Center UX processes User Research, User Interface Design and UX Evaluation with ISO 9241-210 – audit report”, version 1.0 as of 2014-12-17, Evaluation Body IT Usability of TÜV Informationstechnik GmbH

Evaluation Requirements

- ISO 9241: “Ergonomics of human-system interaction” Part 210: “Human-centred design for interactive systems” (2010)
- German document: “Leitfaden Usability”, version 1.3, Stand 2010, DAkkS Deutsche Akkreditierungsstelle GmbH
Chapter 3: “Prüfverfahren für den Usability-Engineering-Prozess auf der Grundlage von DIN EN ISO 13407”
- German document: “Prüfanweisung der Prüfstelle IT Ergonomie PA 10 Durchführung einer Prüfung nach ISO 9241-210”, version 4.2 as of 2014-07-23, Evaluation Body IT Usability of TÜV Informationstechnik GmbH

Evaluation Target

Target of evaluation is the usability engineering process consisting of the sub-processes:

- **User Research**

The user research process investigates markets and users. The process results in use requirements for new or to be improved products.

- **User Interface Design**

The user interface design process applies technical prototyping methods to develop user interface prototypes for further use as demonstrators, usability test objects or to elicit use requirements.

- **UX Evaluation**

UX evaluation stands for the usability testing activities. The Haier UX team is capable of applying these methods to products and prototypes and support the basic methods of user test, including eye tracking and surveys.

Evaluation Result

- The certificate holder maintains an effective process to support usability engineering in development projects.
- The certificate holder has demonstrated effective usability engineering work in eleven demonstration projects.
- The document review and final audit showed that there are no deviations from the requirements of the document “Leitfaden Usability” for maturity level 2

Summary of the Evaluation Requirements

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Based on ISO 13407 the document “Leitfaden Usability” describes following requirements for usability engineering processes:

- **Quality goals for usability**

Usability is declared as a quality goal of the developer’s quality management and usability engineering procedures are documented, e. g. as part of the developer’s quality manual.

- **Team composition, roles**

- User participation in quality control

Users participate in investigation and validation of the context of use

- Requirements engineer

The requirements engineer is member of the project team and supports design decisions with his knowledge of the context of use as well as the use requirements.

- Usability engineer

The usability engineer is member of the project team and is involved in design.

- Usability tester / testing

Personnel separation between usability design and testing is given.

- Moderator

A moderator is involved in the project and has the skill of a requirements engineer or of a usability engineer.

- **Qualification of requirements engineer, usability engineer and usability tester**

The usability staff is trained in analysis, evaluation and prototyping of product quality with respect to usability.

- **Starting time for usability activities**
Usability engineer enters and starts his contributions at the latest during usability prototyping and remains in cooperation until end of project.
- **Task analysis**
During task analysis, ergonomic work requirements are considered. ISO 9241-2 is applied.
- **Development of use requirements**
Development and validation of use requirements is done in the product's context of use.
- **Usability prototyping**
Usability prototyping is done to visualize proposals for solution of interaction and the graphical user interface and to identify use problems.
- **Testing**
Product testing (based on ISO 9241, parts 11 and 110) is performed to detect significant use problems (falsification).
- **Documentation of design decisions**
Documentation of validated use requirements and evaluated design decisions exist.
- **Application and adaption of usability engineering methods and tools**
Experience reports about suitable use are available for usability engineering methods and tools.
- **Embedding into software development process**
Usability engineering activities occur during development and validation of use requirements and also later in the design process.

- **User documentation**

The user documentation (e. g. manuals, training) was compiled from the design documentation with focus on use requirements within the context of use.

- **Personal independence**

Project results rely on objective and validated data as well as on the state of art of ergonomic science (i. e. knowledge of usability standards and literature).

- **Definition of the end of the usability project**

End of project is defined to be after documentation, analysis and repair of use problems found during the first usage phase in the context of use.

- **Maintenance**

Use problems are collected by the developer for product improvement and evaluated systematically.