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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

E-health multimedia services and applications – Personal
health systems

**Interoperability design guidelines for personal
connected health systems:
Services interface: Capability Exchange
capability**

Recommendation ITU-T H.812.3

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Recommendation ITU-T H.812.3

Interoperability design guidelines for personal connected health systems: Services interface: Capability Exchange capability

Summary

The Continua Design Guidelines (CDG) defines a framework of underlying standards and criteria that ensure the interoperability of devices and data used for personal connected health services. The Continua Design Guidelines also contains design guidelines (DGs) that further clarify the underlying standards or specifications by reducing options or by adding missing features to improve interoperability.

ITU-T H.812.3 defines the additional design guidelines for the Capability Exchange-enabled Personal Health Gateway (PHG) and Health & Fitness services Certified Capability Class (CCC). The purpose of the Capability Exchange is to reduce the amount of information that must be pre-configured on a device in order to obtain plug and play interoperability. Specifically, Capability Exchange enables application hosting devices, such as a Personal Health Gateway (PHG) to know what types of messages it can send to the Health & Fitness services, by identifying its Continua CCCs. Likewise, Capability Exchange provides a mechanism for the PHG to inform the Health & Fitness services of its capabilities. This enables the Health & Fitness services to tailor its communication with the PHG. Capability Exchange is mandatory for all Health & Fitness services while it is optional for PHGs.

It is assumed that the PHG is pre-provisioned with a URL, or a set of URLs, denoting the service endpoint of one or more Health & Fitness services. The Capability Exchange process takes place when the PHG first contacts the Health & Fitness services. It may also take place intermittently, to update the information received in the first Capability Exchange. In most cases, the set of Continua CCCs implemented at the Health & Fitness services changes slowly, if at all. Therefore, it is expected that the PHG can store the information about services capabilities and optionally, implement a policy for periodically updating that cache. A PHG might identify several Health & Fitness services in this way and communicate with one or more of these for different purposes.

The Health & Fitness service describes the information about its supported CCCs in a file called "root file". The root file is a special resource that describes the properties of CCCs and how a PHG can start information exchange with these CCCs. The root file and other features of the exchange come from an HL7 standard called hData. hData not only defines the root file format, but also defines the operations for exchanging root files, using HTTP using GET and POST operations, often referred to as "REST" (for representational state transfer).

Each Continua CCC (in addition to the Capability Exchange capability) will use the root file to document information relevant to that capability, including the capability name, the information that can be exchanged under the capability and its format and URLs for REST operations, if supported by that capability. Details are given in the documentation for the respective Continua CCCs.

ITU-T H.812.3 is part of the "ITU-T H.810 interoperability design guidelines for personal connected health systems" subseries that covers the following areas:

- ITU-T H.810 – Interoperability design guidelines for personal connected health systems: Introduction
- ITU-T H.811 – Interoperability design guidelines for personal connected health systems: Personal Health Devices interface
- ITU-T H.812 – Interoperability design guidelines for personal connected health systems: Services interface

- ITU-T H.812.1 – Interoperability design guidelines for personal connected health systems: Services interface: Observation Upload capability
- ITU-T H.812.2 – Interoperability design guidelines for personal connected health systems: Services interface: Questionnaire capability
- ITU-T H.812.3 – Interoperability design guidelines for personal connected health systems: Services interface: Capability Exchange capability (this design guidelines document)
- ITU-T H.812.4 – Interoperability design guidelines for personal connected health systems: Services interface: Authenticated Persistent Session capability
- ITU-T H.813 – Interoperability design guidelines for personal connected health systems: Healthcare Information System interface design guidelines

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CDG, Continua Design Guidelines, capability exchange, healthcare information systems, personal connected health systems, personal health devices, services.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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0 Introduction

The Continua Design Guidelines (CDG) defines a framework of underlying standards and criteria that ensure the interoperability of devices and data used for personal connected health services. The Continua Design Guidelines also contains additional design guidelines (DGs) that further clarify the underlying standards or specifications by reducing options or by adding missing features to improve interoperability.

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This design guidelines document is part of the "ITU-T H.810 interoperability design guidelines for personal health systems" subseries. See [ITU-T H.810] for more details.

0.1 Organization

This design guidelines document is organized in the following manner:

Clauses 0 to 5: Introduction and terminology – These clauses provide useful background information to help understand the structure of the design specifications.

Clause 6: Use cases – This clause provides practical examples.

Clause 7: Behavioural model – This clause is an overview of sequences of interactions and summarizes typical iterations, constraints and exceptions.

Clause 8: Implementation guidance – This clause provides an informative description of the implementation of the Capability Exchange CCC.

Annex A: Normative guidelines – This clause specifies the normative requirements that must be followed by the Capability Exchange CCC.

0.2 Guideline releases and versioning

See clause 0.2 of [ITU-T H.810] for release and versioning information.

0.3 What's new

To see what is new in this release of the design guidelines refer to clause 0.3 of [ITU-T H.810].