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NEXT DST CHANGE SERVICE

Abstract:

This service defines how the information about an upcoming DST change can be exposed using the Generic Attribute Profile (GATT).

Revision History

Revision	Date (yyyy-mm-dd)	Comments
D09r1	2010-11-11	Initial Draft
D09r02	2010-11-17	Edits in F2F
D09r03	2010-11-19	Added SDP record requirement
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Document Terminology

The Bluetooth SIG has adopted Section 13.1 of the IEEE Standards Style Manual, which dictates use of the words ``shall'', ``should'', ``may'', and ``can'' in the development of documentation, as follows:

The word *shall* is used to indicate mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall* equals *is required to*).

The use of the word *must* is deprecated and shall not be used when stating mandatory requirements; *must* is used only to describe unavoidable situations.

The use of the word *will* is deprecated and shall not be used when stating mandatory requirements; *will* is only used in statements of fact.

The word *should* is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain course of action is deprecated but not prohibited (*should* equals *is recommended that*).

The word *may* is used to indicate a course of action permissible within the limits of the standard (*may* equals *is permitted*).

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (*can* equals *is able to*).

Contents

1	Introduction	6
1.1	Conformance	6
1.2	Service Dependency	6
1.3	Bluetooth Specification Release Compatibility	6
1.4	GATT Sub-Procedure Requirements	6
1.5	Transport Dependencies	6
1.6	Error Codes	6
1.7	Byte Transmission Order	6
2	Service Declaration	7
3	Service Characteristics	8
3.1	Time with DST	9
3.1.1	Characteristic Behavior	9
3.1.2	Characteristic Descriptors	9
4	Service Behavior	10
4.1	Notification and Indication Behavior	10
4.2	Broadcast Behavior	10
4.3	Connection Related Behavior	10
4.3.1	Retaining configuration while not connected	10
5	Acronyms and Abbreviations	11
6	References	12

1 Introduction

This service enables a *Bluetooth* device that has knowledge about the next occurrence of a DST change to expose this information to another *Bluetooth* device.

1.1 Conformance

If a server claims conformance to this Service, all capabilities indicated as mandatory for this Service shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated. All mandatory capabilities, and optional and conditional capabilities for which support is indicated, are subject to verification as part of the *Bluetooth* qualification program.

1.2 Service Dependency

This service has no dependencies on other GATT-based services.

1.3 Bluetooth Specification Release Compatibility

This service is compatible with any *Bluetooth* core specification host that includes the Generic Attribute Profile (GATT).

1.4 GATT Sub-Procedure Requirements

There are no requirements beyond those required by the GATT.

1.5 Transport Dependencies

The service may operate over LE transport only.

1.6 Error Codes

No error codes are defined in this service.

1.7 Byte Transmission Order

All characteristics used with this service shall be transmitted with the least significant octet first (i.e., little endian). In the characteristic definitions in the Assigned Numbers [\[2\]](#) the least significant octet is the lowest numbered offset.

2 Service Declaration

The Next DST Change service shall be a «Primary Service» and the service UUID set to «Next DST Change Service» as defined in [\[2\]](#).

There shall be only one instance of the Next DST Change service in the device.

3 Service Characteristics

The Next DST Change service exposes the Time with DST characteristic as defined in [2].

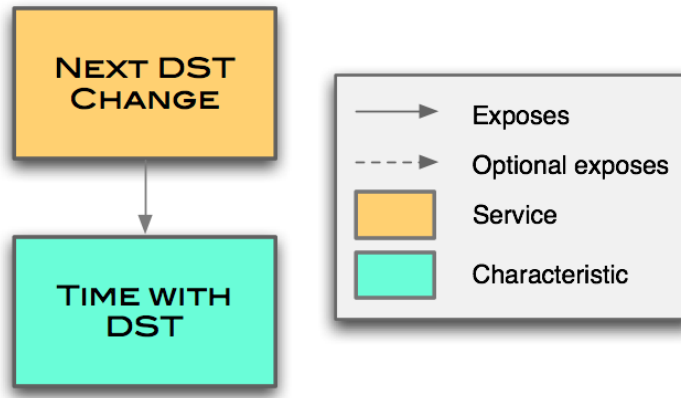


Figure 3.1: Next DST Change service relationships

Characteristic	Ref.	Mandatory / Optional
Time with DST	3.1	M

Table 3.1: The Next DST Change Service Characteristics

In Table 3.1, characteristics that are mandatory or characteristics that are optional that are implemented shall comply with the properties in Table 3.2:

	Broadcast	Read	Write without Response	Write	Notify	Indicate	Signed Write	Reliable Write	Writable Auxiliaries
Time with DST	X	M	X	X	X	X	X	X	X

Table 3.2: Time with DST characteristic properties

Requirements marked with 'M' are mandatory, 'O' are optional and 'X' are excluded (not permitted).

This service defines no security requirements for these characteristics.

The example characteristic database is shown in Appendix A.

3.1 Time with DST

3.1.1 Characteristic Behavior

The Next DST Change Server returns the Time with DST to the time when the next DST change will occur and the DST offset that will be in effect after this change when read using the *GATT Read Characteristic Value* sub-procedure.

If the information about the next DST change is not available, the DST Change server shall set the date to 'unknown date' [2] and the DST offset field to 'DST offset unknown' [2]. If DST offset is not observed at the current location, the DST Change server shall set the date to 'unknown date' [2] and the DST offset field to zero.

3.1.2 Characteristic Descriptors

No characteristic descriptors are required beyond those defined in the characteristic specification.

4 Service Behavior

4.1 Notification and Indication Behavior

There are no characteristics that support indication or notification in this service.

4.2 Broadcast Behavior

There are no characteristics that support broadcast in this service.

4.3 Connection Related Behavior

4.3.1 Retaining configuration while not connected

There are no requirements for the attributes while not connected.

5 Acronyms and Abbreviations

Acronyms and Abbreviations	Meaning
DST	Daylight Saving Time
GATT	Generic Attribute Profile
LE	Low Energy

Table 5.1: Acronyms and Abbreviations

6 References

- [1] *Bluetooth* Core Specification v4.0
- [2] Characteristic and Descriptor descriptions are accessible via the [Bluetooth SIG Assigned Numbers](#).

Appendix A Example Characteristic Database

An example attribute database for the Next DST Change service is shown in [Table 6.1](#).

UUID [2]	Permissions	Mandatory / Optional	Value (Default)
<<Primary Service>>	Read	M	<<Next DST Change service>>
<<Characteristic>>	Read	M	Properties = 0x02 (read), handle = Handle of Time with DST UUID = <<Time with DST>>
<<Time with DST>>	Read	M	ref [2]

Table 6.1: Example attribute database for Next DST Change Service