Emergency Configuration Service

***Bluetooth*® Service Specification**

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Abstract:

This service enables configuration and broadcasting of emergency signals to aid in locating a missing person or pet in an emergency situation.

Revision History

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1 Introduction

The Emergency Configuration Service provides a client a way to read and, optionally, configure the emergency data that will be broadcast by the server device when it is in an emergency alert state.

1.1 Conformance

If conformance to this specification is claimed, all capabilities indicated as mandatory for this specification shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated.

1.2 Service dependencies

This service has no dependencies on other Generic Attribute Profile (GATT)-based services.

1.3 Bluetooth Core Specification release compatibility

This specification is compatible with Bluetooth Core Specification v5.0 or later [1].

1.4 GATT sub-procedure requirements

There are no sub-procedure requirements beyond the requirements of GATT.

1.5 Transport dependencies

This service is specified for operation over the Bluetooth Low Energy (LE) transport.

1.6 Application error codes

This service defines no Attribute Protocol Application Error Codes.

1.7 Byte transmission order

All characteristics used with this service shall be transmitted with the least significant octet first (i.e., little endian). The least significant octet is identified in the characteristic definitions in this specification.

1.8 Language

1.8.1 Language conventions

The Bluetooth SIG has established the following conventions for use of the words ***shall***, ***must***, ***will***, ***should***, ***may***, ***can***, ***is***, and ***note*** in the development of specifications:

shall	is required to – used to define requirements.
must	is used to express: a natural consequence of a previously stated mandatory requirement. OR an indisputable statement of fact (one that is always true regardless of the circumstances).
will	it is true that – only used in statements of fact.
should	is recommended that – used to indicate that among several possibilities one is recommended as particularly suitable, but not required.
may	is permitted to – used to allow options.
can	is able to – used to relate statements in a causal manner.

is	is defined as – used to further explain elements that are previously required or allowed.
note	Used to indicate text that is included for informational purposes only and is not required in order to implement the specification. Each note is clearly designated as a “Note” and set off in a separate paragraph.

For clarity of the definition of those terms, see Core Specification Volume 1, Part E, Section 1.

1.8.2 Reserved for Future Use

Where a field in a packet, Protocol Data Unit (PDU), or other data structure is described as "Reserved for Future Use" (irrespective of whether in uppercase or lowercase), the device creating the structure shall set its value to zero unless otherwise specified. Any device receiving or interpreting the structure shall ignore that field; in particular, it shall not reject the structure because of the value of the field.

Where a field, parameter, or other variable object can take a range of values, and some values are described as "Reserved for Future Use," a device sending the object shall not set the object to those values. A device receiving an object with such a value should reject it, and any data structure containing it, as being erroneous; however, this does not apply in a context where the object is described as being ignored or it is specified to ignore unrecognized values.

When a field value is a bit field, unassigned bits can be marked as Reserved for Future Use and shall be set to 0. Implementations that receive a message that contains a Reserved for Future Use bit that is set to 1 shall process the message as if that bit was set to 0, except where specified otherwise.

The acronym RFU is equivalent to Reserved for Future Use.

1.8.3 Prohibited

When a field value is an enumeration, unassigned values can be marked as “Prohibited.” These values shall never be used by an implementation, and any message received that includes a Prohibited value shall be ignored and shall not be processed and shall not be responded to.

Where a field, parameter, or other variable object can take a range of values, and some values are described as “Prohibited,” devices shall not set the object to any of those Prohibited values. A device receiving an object with such a value should reject it, and any data structure containing it, as being erroneous.

“Prohibited” is never abbreviated.

2 Service

This section defines service declaration and behavior.

2.1 Declaration

The Emergency Configuration service shall be instantiated as a «Primary Service».
The service Universally Unique Identifier (UUID) shall be set to «Emergency Configuration» as defined in [2].

2.2 Behavior

This service does not have any behavior beyond what is described for its characteristics.

3 Service characteristics

This section defines the characteristic and descriptor requirements.

Characteristic Name	Requirement	Mandatory Properties	Optional Properties	Security Permissions
Emergency ID	M	Read	—	Encryption
Emergency Text	O	Read	Write	Encryption

Table 3.1: Emergency Configuration Service characteristics

M: Mandatory

O: Optional

3.1 Emergency ID

The Emergency ID characteristic exposes an ID for each device.

This ID shall be a static 6-octet value to identify the device during alerting. The ID shall be the first 48 bits of a 128-bit random number generated using the requirements for random generation defined in the Bluetooth Core Specification [Vol 2] Part H, Section 2 [1]. The random number used for the ID should not be used for any other purpose by the device. The static Emergency ID can be generated during manufacturing or when power is first applied to the device.

3.1.1 Characteristic behavior

This characteristic is static over the lifetime of the device.

3.2 Emergency Text

The Emergency Text characteristic shall be a variable-length string consisting of 1 to 20 octets with no string termination character. Encoding shall be UTF-8.

The actual string content is use case dependent.

This characteristic will typically hold information (such as a name or phone number) that is human-readable by someone receiving an emergency signal on their device.

3.2.1 Characteristic behavior

The Emergency Text characteristic shall return its associated value when it is read.

If the Emergency Text characteristic is writable, it may be written by a client device that wants to configure the emergency alerts of the server device.

4 Acronyms and abbreviations

Acronym/Abbreviation	Meaning
GATT	Generic Attribute Profile
LE	Bluetooth Low Energy functionality
RFU	Reserved for Future Use
UUID	Universally Unique Identifier

Table 4.1: Acronyms and abbreviations

5 References

[1] Bluetooth Core Specification, v5.0 or later

[2] Characteristic and Descriptor descriptions are accessible via the Bluetooth SIG Assigned Numbers