Time HTTP/TLS/JSON

Interface Design Description

Service ID: *"time"*

Abstract
This document describes the Time service IDD for HTTP/TLS/JSON.

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[Production and Energy System Automation Intelligent-Built environment and urban infrastructure for sustainable and friendly cities]

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1 Overview

This document describes the HTTP/TLS/JSON variant of the Time Eclipse Arrowhead service. The Time service is used to manage secure date, time and location information application systems in a local cloud. The Time service also provides a trusted source of time data using TLS and certificates.

This document exists as a complement to the *Time – Service Description* (Time SD) document. For further details about how this service is meant to be used, please consult that document. The rest of this document describes how to realize the Time service using HTTP [1], TLS [2] and JSON [3], both in terms of its interfaces (Section 2) and its information model (Section 3).

2 Service Interfaces

This section lists the interfaces that must be exposed by the Time service in alphabetical order. In particular, each subsection first names the HTTP method and path used to call the interface, after which it names an abstract interface from the Time service's SD document, as well as input and output types. All interfaces in this section respond with the HTTP status code `200 OK` if called successfully, unless otherwise is stated.

2.1 GET /timemanager/time

Interface: GetTime
Output: TimeManagerTimeResponse

Called to fetch the active time, date and location seetings for a lcoal cloud. The response is a exemplified in Listing 1.

```
GET /timemanager/time HTTP/1.1

{
  "epoch": 1626766872,
  "epoch_ms": 1626766872449,
  "tz": "Europe/Stockholm",
  "dst": true,
  "trusted": true
}
```

Listing 1: A GetTime invocation.

Code	Type	Description
200	OK	No error
401	UNAUTHORIZED	No valid authorization
404	NOT FOUND	No valid configuration found
500	INTERNAL SERVER ERROR	Database error etc

Table 1: GetTime status code responses

3 Information Model

The Time service currently supports JSON only, even though more encodings can be added in the future.

4 References

[1] R. Fielding and J. Reschke, “Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing,” RFC 7230, 2018, RFC Editor. [Online]. Available: https://doi.org/10.17487/RFC7230

[2] E. Rescorla, “The Transport Layer Security (TLS) Protocol Version 1.3,” RFC 8446, 2018, RFC Editor. [Online]. Available: https://doi.org/10.17487/RFC8446

[3] T. Bray, “The JavaScript Object Notation (JSON) Data Interchange Format,” RFC 7159, 2014, RFC Editor. [Online]. Available: https://doi.org/10.17487/RFC7159

5 Revision History

5.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	2021-03-29	0.1	Initial	Jens Eliasson
2	2021-06-10	0.7	Text updates	Jens Eliasson
3	2021-06-23	0.8	Minor fixes	Jens Eliasson
4	2021-07-22	1.0	Final version	Jens Eliasson

5.2 Quality Assurance

No.	Date	Version	Approved by
1			