

Developer Handbook- 1st EvAAL competition Annex A SocketAdapter

(Evaluating AAL Systems through Competitive Benchmarking)

<http://evaal.aaloo.org>

V Special theme on Indoor Localization and Tracking

CIAMI Living Lab

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1 Introduction

Due to integration difficulties it may arise with the interface provided, the EvAAL board has decided to offer a simpler interface with universAAL. This interface is through a socket, a server is run and the competitor just has to inform the server through sockets. This Anex describes this solution

1.1 Architecture

The architecture of this solution is based on another concept of adapter, instead of receiving Java calls it receives commands through an IP socket. Then it interprets these commands and transforms them into universAAL context events.



Figure 1 Router-like architecture of the SocketAdapter solution

2 The SocketAdapter

2.1 Running

To run follow these simple steps:

1. Download file <http://evaal.aaloa.org/files/SocketAdapter.zip>
2. Un-zip the file in any location of your convenience.
3. Double click on the *run.bat* script file (note this script can also be run from a console, and will work also in Unix-based OS)

A terminal should appear, displaying info and debug messages. To ensure that the SocketAdapter has correctly started look, within the few last lines, for something like the following:

```
14:23:40.065 - INFO - [Thread-2]
org.aaloa.evaal.location.socket.competition.Activator Opening listening
socket at 4444
```

It is recommended that the competitor runs his/her own instance of SocketAdapter when performing the competition. Nevertheless there will be an instance running in the living lab as backup for those competitors who opt for this solution.

2.2 Simple Socket Protocol

Once the socket is opened, the communication will be through textual mode. The default port is 4444 (over TCP).

The parameters should be entered, separated by single white space, in the following order:

<ID> <X> <Y> <T> <AOI>

Where:

- **<ID>** is a string identifying the competitor issuing the location point.
- **<X>** is the X coordinate of the location point, represented in decimal form (valid examples: "0" "1" "1.2" "1.269856"; all without quotation marks). Remember the expected resolution is that of a double (IEEE 754 binary64 standard) higher resolutions would not be parsed. The reference point can be found in the Technical annex ¹figure 7 (left and down).
- **<Y>** same as <X> but for the Y coordinate of the location point.
- **<T>** is an integer representing the time at which the person was located in the current location point described. This is intended to represent time since epoch in milliseconds (otherwise known as POSIX time), so this is any integer from 0 to 4294967295. Although not recommended this parameter can be also expressed in relative time.
- **<AOI>** is a number representing the area of interest at which the person is. The AOl's identifiers will be supplied when in the laboratory.

Each command should end with an "end of line" character. The SocketAdapter will respond a string "Published" if it has been parsed correctly and the event has been published or "NotParsed" if the command was not correctly formatted.

These commands can be tested by means of any telnet client, connecting to wherever the SocketAdapter is running (normally in localhost, the same computer as the client is running) on port 4444. Connect with the server and input textually the commands.

CompetitorD 0 0.235 1309782587440 0
Comp_D 1.569889 2.45694 1309782569435 1
D_comp 5.697946 3 13097825693165 4
D 0 0 0 0
D 0.5698989875687987 0.6859865 15 0

Table 1 Examples of valid commands

¹ <http://evaal.aaloo.org/current-competition/techannex>

2.3 Tweaking the server

The SocketAdapter server can be configured through the file located at:
configurations\location.socket.competition\competition.properties

In this file the Port, delimiter used to separate parameters, maximum number of connections, the type of new line after the respond string, as well as these status strings is configurable.

Parameter	Description	Default
port	Port to listen for connection requests	4444
delimiter	Delimiter for parameters in simple socket protocol	<White Space>
max_connections	Maximum number of simultaneous connections	10
newLineReturnWords	Type of new line after return strings, “\n” is a new line and “\r” is a carriage return.	\n\r
correct	The string outputted when the command has been parsed and published	Published
incorrect	The string outputted when the command has not parsed.	NotParsed