> PRELIMINARY

MTS Actions API Specification

Introduction

This document describes the MTS Actions API which can be used by applications to perform various meter actions via MTS programmatically.

Basics

Authentication

All HTTP calls (with exceptions noted below) must contain an MTS Actions API Access Token contained in an Authorization header with the Bearer authentication scheme. An API Access token can be generated within the MTS application by an administrator.

To generate a token go to the Extras - MTS API page. Click **Create new token** and choose a valid duration (after which time the token will expire) and set the scope to **MTS Actions API**. Once the token has been created it must be copied and saved. It is not possible to view the token in MTS once it has been generated. The token is not stored in MTS and it is the responsibility of the MTS administrator to store the token securely. If the administrator believes that a token is compromised they can delete it in MTS at any time.

> Note that the MTS Actions API is only available over HTTPS.

Limitations

The MTS Actions API is a work in progress and support for the actions does not exist for all meters. The table below shows the current action support:

Meter type/Action	time-update
CEWEPRO	
CEWEPRO100	supported
EDMIATLAS	supported
ELSTERA1700	supported
ELSTERAS230	supported
ELSTERA1140	supported
EMLITECOP10	supported
ISKRA_MX37X	supported
LG_DLMS	supported
PREMIERPRI	

API Methods

The API is implemented as an HTTP based set of methods that use JSON as the data representation format. The following methods are supported:

Method	Type	HTTP Verb	Purpose
time-update	Command	POST	Set time for a meter to the current time. Note 1.
action-status	Query	GET	Read the current status of a previously requested action.
action-cancel	Query	GET	Cancel a previously requested action.

Notes

> 1. Currently this is only supported for a subset of meters.

time-update command

The test-update command is used to set the meter time to the current GMT time. This action will only attempt to adjust the time if it deviates more that a fixed amount as determined by the MTS configuration.

A unique Test Id will be returned which can be used query the test status.

JSON Command Parameters

Name	Type	Value	Mandatory
requestReference	String	Optional reference that the client may include in the request for their own use, e.g. MPAN. This parameter will be returned in the result but has no other significance.	NO
immediate	Bool	A boolean value. true => test will be run immediately, false => test will be run overnight. If omitted a value of false is assumed.	NO.
meterType	String	Specifies the type of meter to be tested. As specified in the MTS user guide for batch requests.	YES
remoteAddress	String	Specifies the remote address used to connect to the meter. As specified in the MTS user guide for batch requests.	YES
comsSettings	String	Normally this field should be omitted but for cases where meters are configured in a non standard way this field can be used to override the default coms settings. This is only applicable for modem connections and can be used to specify the data bits, parity and stop bits in the form DPS, e.g. 7E1 to specify 7 stop bits, even parity and 1 stop bit.	NO
outstationAddress	String	Specifies the outstation address/device id of the meter.	NO

Name	Type	Value	Mandatory
serialNumber	String	The meter serial number. If included a check will be made to determine if the meter returns this serial number and an error will be reported if there is a mismatch	NO
password	String	The meter password.	

JSON Response parameters

Name	Type	Value	Mandatory
requestId	Integer	The MTS request ID.	YES

Sample - successful case

```
POST https://www.coherent-research.co.uk/MTS/time-update
Accept: application/json
Content-type: application/json
Authorization: Bearer API-ACCESS-TOKEN

{
  "requestReference": "ABC",
  "meterType": "ELSTERA1700",
  "remoteAddress": "07777000000",
  "outstationAddress": "1",
  "serialNumber": "12345678",
  "password": "AAAA0000"
}


HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "requestId": 1234
}
```

Sample - error case

```
POST https://www.coherent-research.co.uk/MTS/time-update
Accept: application/json
Content-type: application/json
Authorization: Bearer API-ACCESS-TOKEN

{
  "requestReference": "ABC",
  "meterType": "ELSTERA1700",
  "remoteAddress": "abc",
  "outstationAddress": "1",
```

```
    "serialNumber": "12345678",
    "password": "AAAA0000"
  }


HTTP/1.1 400 Bad Request
Content-Type: application/json; charset=utf-8


{
    "details": "Remote address is not in a recognised format"
}
```

action-cancel command

The client can request the cancellation of any previously requested action. MTS will remove the matching request from the queue. If the request has already been processed (or is being processed) MTS will respond positively.

JSON Request Parameters

Name	Type	Value	Mandatory
requestId	Integer	The request ID returned by the command that requested the action.	YES

JSON Response parameters

Name	Type	Value	Mandatory
requestId	Integer	The request ID returned by the command that requested the action.	YES

Sample - successful case

```
DELETE https://www.coherent-research.co.uk/MTS/action-cancel
Accept: application/json
Content-type: application/json
Authorization: Bearer API-ACCESS-TOKEN


{
    "requestId": 1234
}


HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8


{
    "requestId": 1234
}
```

action-status query

The client can request the status of any previously requested action using the request ID.

URL Request Parameters

Name	Type	Value	Mandatory
requestId	Integer	ID returned by the relevant command.	YES

JSON Response parameters

Name	Type	Value	Mandatory
requestId	Integer	The MTS request ID.	YES
requestReference	String	Note 1	NO
meterType	String	Note 1	YES
remoteAddress	String	Note 1	YES
comsSettings	String	Note 1	NO
outstationAddress	String	Note 1	NO
password	String	Note 1	YES
action	String	Indicates the action the was requested. Values are "TimeUpdate"	YES
result	String	Indicates the overall result of the collection request. Values are "PENDING" (i.e. the collection has not been performed yet), "SUCCESS", "PARTIAL SUCCESS" (note 3) or "ERROR: details" where details describe the problem that caused the test to fail.	YES
actionRequestTime	String	The time the action command was received	NO
actionStartTime	String	The time the action started. In the case of multiple retries this will be the start of the first attempt. Note 1	NO
actionEndTime	String	The time the action ended. In the case of multiple retries this will be the end of the last attempt. Note 1	NO.
connectionStartTime	String	The time that the communication channel was opened. In the case of multiple retries this will be the start of the last attempt. Note 1	NO
connectionEndTime	String	The time that the communication channel was closed. In the case of multiple retries this will be the of the last attempt. Note 1	NO

Name	Type	Value	Mandatory
serialNumber	String	The serial number received from the meter, or "ERROR: details" if it was not possible to fetch the serial number from the meter or if the serial number from the request is included and does not match the serial number read from the meter.	NO
meterTimeOffset	String	The amount of time the meter deviates from MTS server time (BEFORE any TimeUpdate action is performed). This is in the format +/-Ns, e.g. -203s (indicates that the time was 203 seconds behind the server time when it was read). If no time was read this will contain "ERROR: details" where details describe the problem.	NO
meterTimeOffsetPostUpdate	String	The amount of time the meter deviates from MTS server time AFTER a TimeUpdate action has been performed. The format is the same as for meterTimeOffset.	NO

NO

Notes:

1. The parameters from the original test-request command are repeated here.
2. All times are in UTC and in the format YYYY-MM-DDTHH:mm:ssZ

Sample - pending action

```
GET https://www.coherent-research.co.uk/MTS/action-status?requestId=1234
Accept: application/json
Authorization: Bearer API-ACCESS-TOKEN

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "requestId": 1234,
  "resultSummary": "PENDING",
}
```

Sample - successfully completed time-update action

```
GET https://www.coherent-research.co.uk/MTS/test-status?requestId=1234
Accept: application/json
Authorization: Bearer API-ACCESS-TOKEN
```

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8

{
  "requestId": 1234,
  "requestReference": "0001",
  "meterType": "ELSTERA1700",
  "remoteAddress": "07777000000",
  "outstationAddress": "1",
  "serialNumber": "12345678",
  "password": "AAAA0000",
  "actionType": "TIME-UPDATE",
  "resultSummary": "SUCCESS",
  "testStartTime": "2019-01-02T04:00:00",
  "testEndTime": "2019-01-02T04:01:30",
  "connectionStartTime": "2019-01-02T04:02:00",
  "connectionEndTime": "2019-01-02T04:01:28",
  "serialNumber": "12345678",
  "meterTime": "2019-01-02T03T04:02:15 +10s"
}
```