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ILS xAPI Statements

External Media-Object Status Update via xAPI Statements

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Author(s): Sven Steudter
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Content

imc
information multimedia communication AG
Headquarter Saarbrücken
Scheer Tower, Uni-Campus Nord
D-66123 Saarbrücken
T. +49 681 9476-0 | Fax -530
info@im-c.com
im-c.com

1 imc xAPI Learning Activity

The Experience API (xAPI) is a learning technology interoperability specification that makes it easier for learning technology products to communicate with one another. In this context, xAPI statements can be used to track learning events in almost real-time. When an event takes place, the partner sends an xAPI compliant HTTP POST payload to the corresponding imc LMS URL.

2 Authentication

The xAPI webhooks expects two-legged OAuth 2.0 authenticated POST requests. Two-legged OAuth is also known as OAuth 2.0 Client Credentials Grant. The partner providing the external content is the client, and the imc LMS is the the authorization server in the OAutch context. The partner system needs to authenticate at the LMS directly in a system-to-system context. This section outlines the authentication request/response:

2.1 Access Token Request Reference

Request Details as X-WWW-Form

Table 1

URL	Verb	Headers
https://DOMAIN-IMC-LMS-PLATFORM/igs/oauth/accesstoken	POST	Content-type=x-www-form-urlencoded

Request Body Parameters

Table 2

Parameter	Description	Required
grant_type	Value will always be client_credentials	Yes
client_id	Value provided by imc	Yes
client_secret	Value provided by imc	Yes

Sample cURL Request

Bash

```
curl -X POST 'https://your-learning-platform/igs/oauth/accesstoken' \
-H 'Content-Type: application/x-www-form-urlencoded' \
-d 'grant_type=client_credentials&client_id=partner123&client_secret=s3cr3t'
```

2.2 Access Token Response Reference

Response Details

Table 3

Status	Headers
200	Content-Type: application/json;charset=UTF-8

Response Body

Table 4

Item	Value
`access_token`	Valid access token string
`expires_in`	Time to live (TTL) in seconds
`token_type`	always "bearer"

Sample Response

JSON

```
{
  "access_token":"2YotnFZFEjr1zCsicMWpAA....",
  "token_type":"bearer",
  "expires_in":3600
}
```

2.3 Alternative Request as JSON

Sample cURL Request with JSON Payload

Bash

```
curl -X POST 'https://your-learning-platform/igs/oauth/accesstoken' \
--header 'Accept: application/json' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--header 'Content-Type: application/json' \
--data-raw '{
              "grant_type": "client_credentials",
              "client_id": "partner123",
              "client_secret": "s3cr3t"
            }'
```

3 Activity Statement

In general, the activity webhook POST body is based on the “`actor`”, “`verb`”, “`object`” data model. This section describes each object in the data model. For additional details, review the Experience API Data section of the specification. Currently the imc LMS provides the following activities recognized:

- **`COMPLETED`** Sent when the learner/actor has completed an external course (= media object in the LMS).

3.1 Requirement

The POST activity statements require a mandatory information sent. Two options are available:

URL Param

Add the URL param "`igsClientId`" with the provided value from imc to ALL POST statement calls.

Header

Add the header "`X-IGS-Client-Id`" with the provided value from imc to ALL POST statement calls.

3.2 Completed Statement POST Body example

Here is an example “COMPLETED“ statement request POST body. This statement would be sent after actor “max.mustermann@somedomain.com“ completed the external object of type course with an unique id, which can be something like "urn:partnernamespace:objecttype:objectid".

JSON

```
{
  "actor":
  {
    "mbox": "mailto:max.mustermann@somedomain.com",
    "objectType": "Agent"
  },
  "result":
  {
    "duration": "PT2M33S",
    "completion": true
  },
  "verb":
  {
    "display":
    {
      "en-US": "COMPLETED"
    },
    "id": "http://adlnet.gov/expapi/verbs/completed"
  },
  "id": "0ea6d5c8-48f5-4e8d-805a-a996f8f6867f",
  "object":
  {
    "definition":
    {
      "type": "http://adlnet.gov/expapi/activities/course"
    },
    "id": "urn:partnernamespace:objecttype:objectid",
    "objectType": "Activity"
  },
  "timestamp": "2020-01-11T10:30:45.154Z"
}
```

3.3 Activity Statement: Sample cURL

Bash

```
curl -X POST \
  https://your-learning-platform.com/xAPI/statements \
  -H 'Authorization: Bearer AyOtu...' \
  -H 'Connection: close' \
  -H 'Content-Type: application/json' \
  -H 'X-Experience-API-Version: 1.0.0' \
  -d '{ "actor":
        {
          "mbox": "mailto:max.mustermann@somedomain.com",
          "objectType": "Agent"
        },
        "result":
        {
          "duration": "PT2M33S", "completion": true
        },
        "verb":
        {
          "display":
          {
            "en-US": "COMPLETED"
          },
          "id": "http://adlnet.gov/expapi/verbs/completed"
        },
        "id": "0ea6d5c8-48f5-4e8d-805a-a996f8f6867f",
        "object":
        {
          "definition":
          {
            "type": "http://adlnet.gov/expapi/activities/course"
          },
          "id": "urn:partnernamespace:objecttype:objectid",
          "objectType": "Activity"
        },
        "timestamp": "2020-01-11T10:30:45.154Z"
      }'
```

3.4 Actor

The "`actor`" object identifies the user who performed an action in the partner system. Currently only "`email`" as user identifier is supported. The emails of the partner system and in the imc LMS **must** match for the same user to establish a mapping.

- **`EMAIL`** A learner's work email address value.

Actor: Email Identifier Example

JSON

```
"actor":
{
  "mbox": "mailto: max.mustermann@somedomain.com",
  "objectType": "Agent"
}
```

3.5 Result

The "`result`" object represents a measured learning outcome. The completion field indicates whether or not the partners' course was completed in full and duration is the period of time over which the completion took place. Durations are expressed using the format for duration in ISO 8601:2004(E) section 4.4.3.2.

Example when course is completed

JSON

```
"result": {
  "duration": "PT2M33S",
  "completion": true
}
```

3.6 Verb

The "`verb`" object identifies the event triggered in the partner system. The supported verb is "`COMPLETED`". The event is fired when a user completes a partner course for "`COMPLETED`" statements.

Verb: Completed Example

JSON

```
"verb": {
  "display":
  {
    "en-US": "COMPLETED"
  },
  "id": "http://adlnet.gov/expapi/verbs/completed"
}
```

3.7 Object

"`object`" identifies a course at the partner. The "`object.id`" URN value is a unique identifier whose value should be treated as opaque.

Object: Course Example

JSON

```
"object":
{
  "definition":
  {
    "type": "http://adlnet.gov/expapi/activities/course"
  },
  "id": "urn:partnernamespace:objecttype:objectid",
  "objectType": "Activity"
}
```