



IMS Japan Society

教育関連データのデータ連携の実現に向けた実証調査研究

LTI 1.3 1EdTech 開発ツール 説明会

2022/12/27

日本IMS協会

IMS Global Certified Trainer: IMS認定 訓練/実装支援管理士

秦 隆博

内容

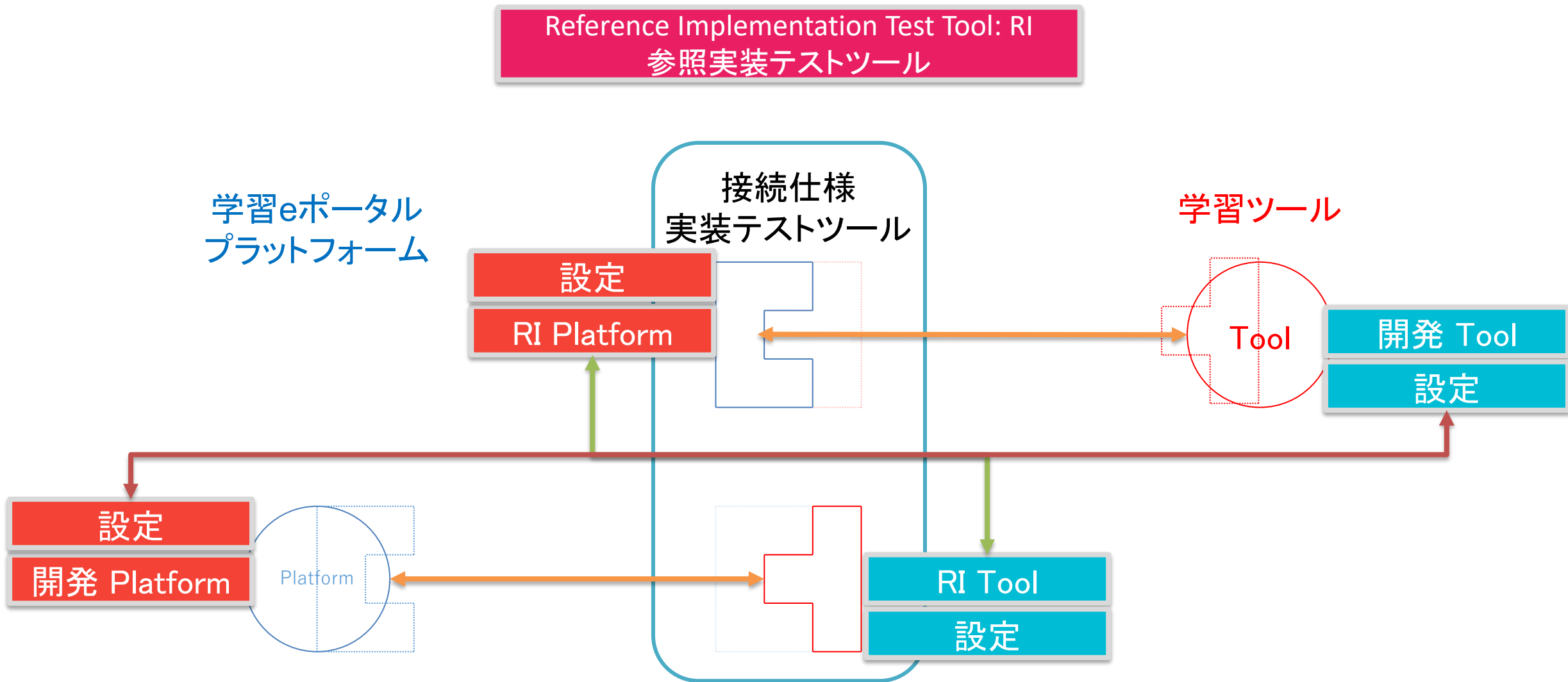
- 開発実装に向けた解説 ← 2022年12月12日勉強会
 - LTI 1.3 CORE 技術標準概要
 - LTI 1.3 開発支援リソース
- 1EdTech LTI 1.3 実装支援ツール紹介
 - **Reference Implementation : リファレンス・インプリメンテーション : RI**
 - Conformance Test Tool : コンFORMANCE・テスト・ツール

RI : Reference Implementation

リファレンス・インプリメンテーション

1EDTECH LTI 1.3 実装支援ツール

RI による開発支援ステップ



LTI[®] v1.3 Reference Implementation Test Tool



IMS GLOBAL
Learning Tools Interoperability

Home Manage Tools Manage Platforms Generate Keys Release Notes

Logged in as: t-hata@imsjapan.org Logout

Team: DA-LTI-Training

- <https://lti-ri.imsjglobal.org/>
- LTI 1.3のシミュレーション/接続テストが可能: Core, DeepLink, AGS, NRPS
 - Manage Platforms: Platform作成・設定・連携操作(ツール起動)
 - Manage Tools: Tool作成・設定
 - Generate Keys: PKIキー作成
- Instructions: Tool & Platformの設定とPlatformからToolの起動結果表示
 - Step 1: PKI キー作成
 - Step 2: Platform 作成・設定
 - Step 3: Platform Deployment Key 作成
 - Step 4: Tool 作成
 - Step 5: PlatformからTool起動(設定)
 - コンテキスト – Course
 - リソースリンク
 - » ラインアイテムズ – ラインアイテム

ユーザ/ロール

RI Platform

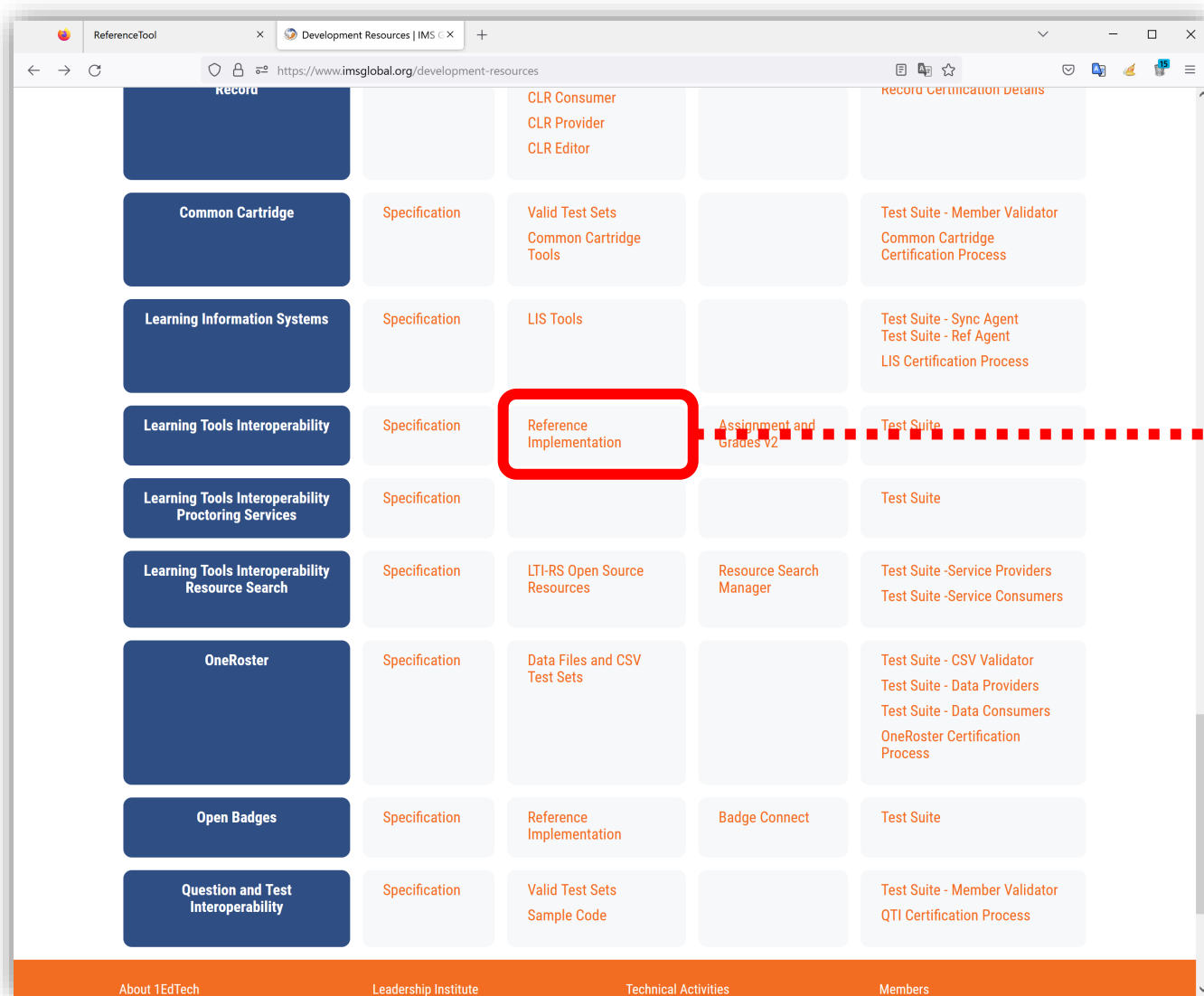
RI Tool

コンテキスト

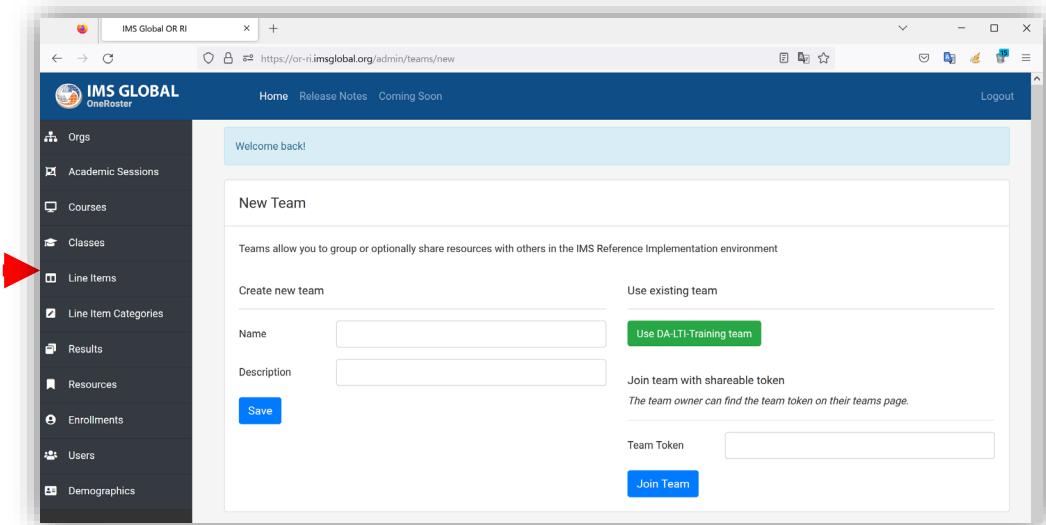
設定

設定

RI Test Tool 起動手順 方法1



Recoru		CLR Consumer CLR Provider CLR Editor		Recoru Certification Details
Common Cartridge	Specification	Valid Test Sets Common Cartridge Tools		Test Suite - Member Validator Common Cartridge Certification Process
Learning Information Systems	Specification	LIS Tools		Test Suite - Sync Agent Test Suite - Ref Agent LIS Certification Process
Learning Tools Interoperability	Specification	Reference Implementation	Assignment and Grades v2	Test Suite
Learning Tools Interoperability Proctoring Services	Specification			Test Suite
Learning Tools Interoperability Resource Search	Specification	LTI-RS Open Source Resources	Resource Search Manager	Test Suite - Service Providers Test Suite - Service Consumers
OneRoster	Specification	Data Files and CSV Test Sets		Test Suite - CSV Validator Test Suite - Data Providers Test Suite - Data Consumers OneRoster Certification Process
Open Badges	Specification	Reference Implementation	Badge Connect	Test Suite
Question and Test Interoperability	Specification	Valid Test Sets Sample Code		Test Suite - Member Validator QTI Certification Process



IMS GLOBAL OneRoster

Home Release Notes Coming Soon Logout

Welcome back!

New Team

Teams allow you to group or optionally share resources with others in the IMS Reference Implementation environment

Create new team

Use existing team

Name

Description

Save

Use DA-LTI-Training team

Join team with shareable token

The team owner can find the team token on their teams page.

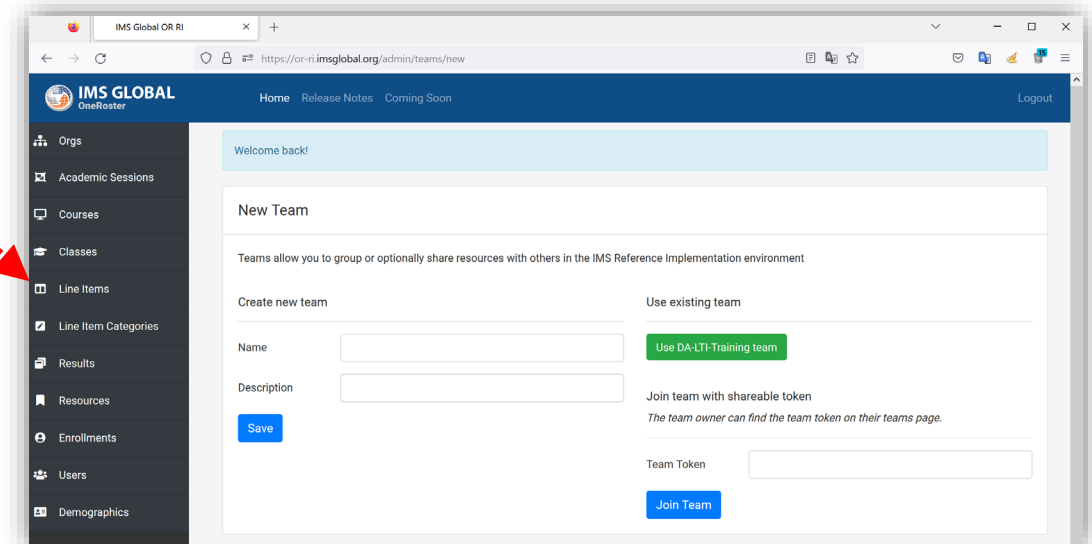
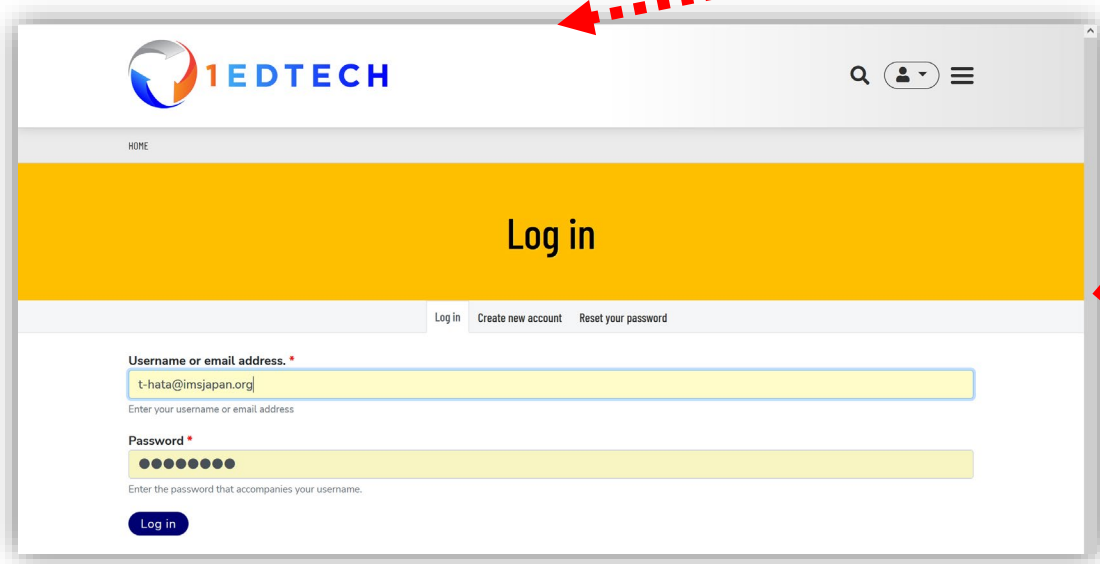
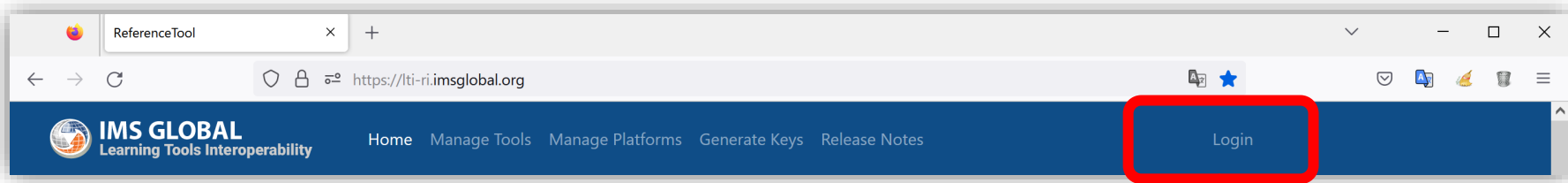
Team Token

Join Team

<https://lti-ri.imsglobal.org/>

RI Test Tool 起動手順 方法2

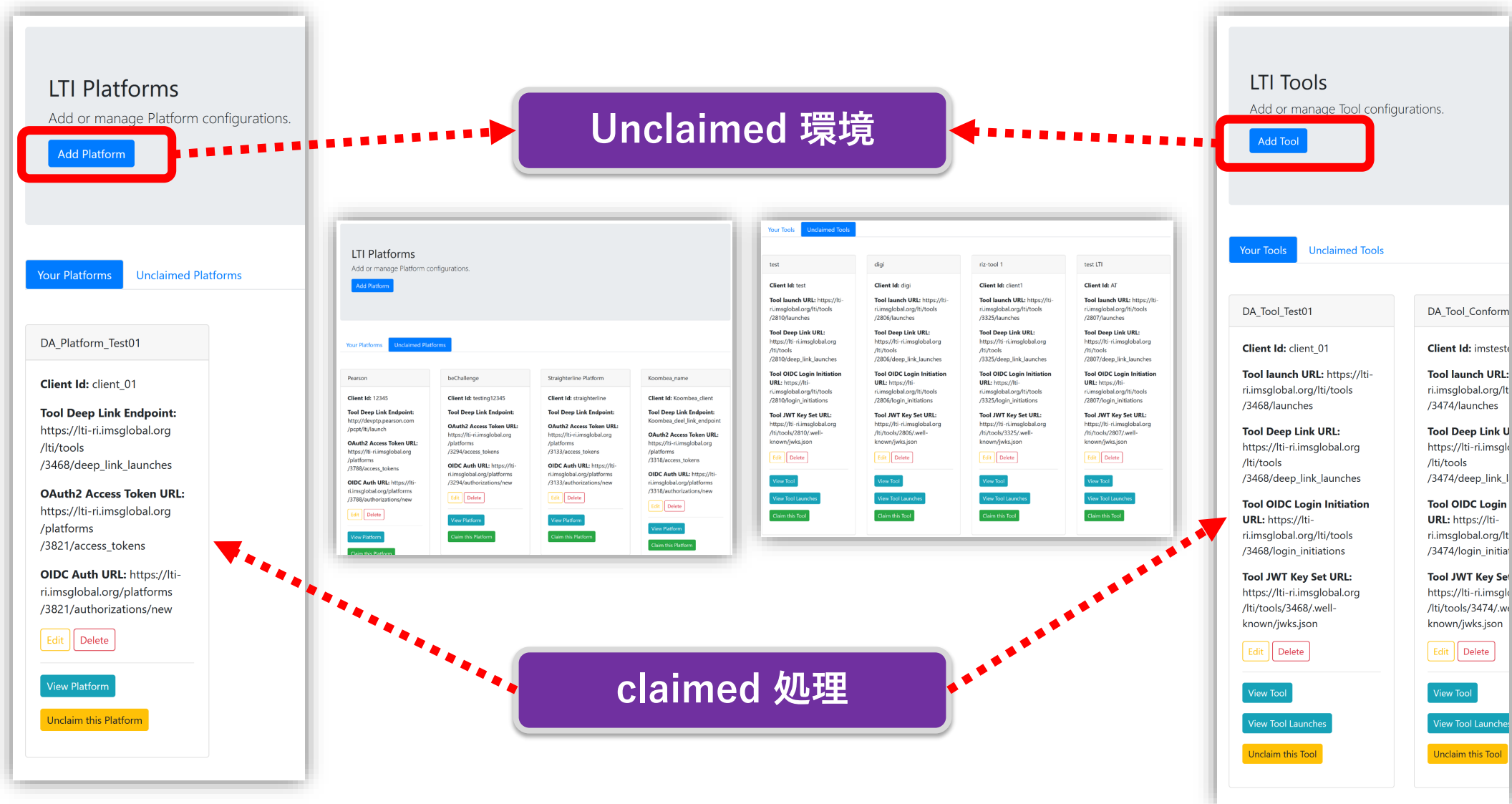
<https://lti-ri.imglobal.org/>



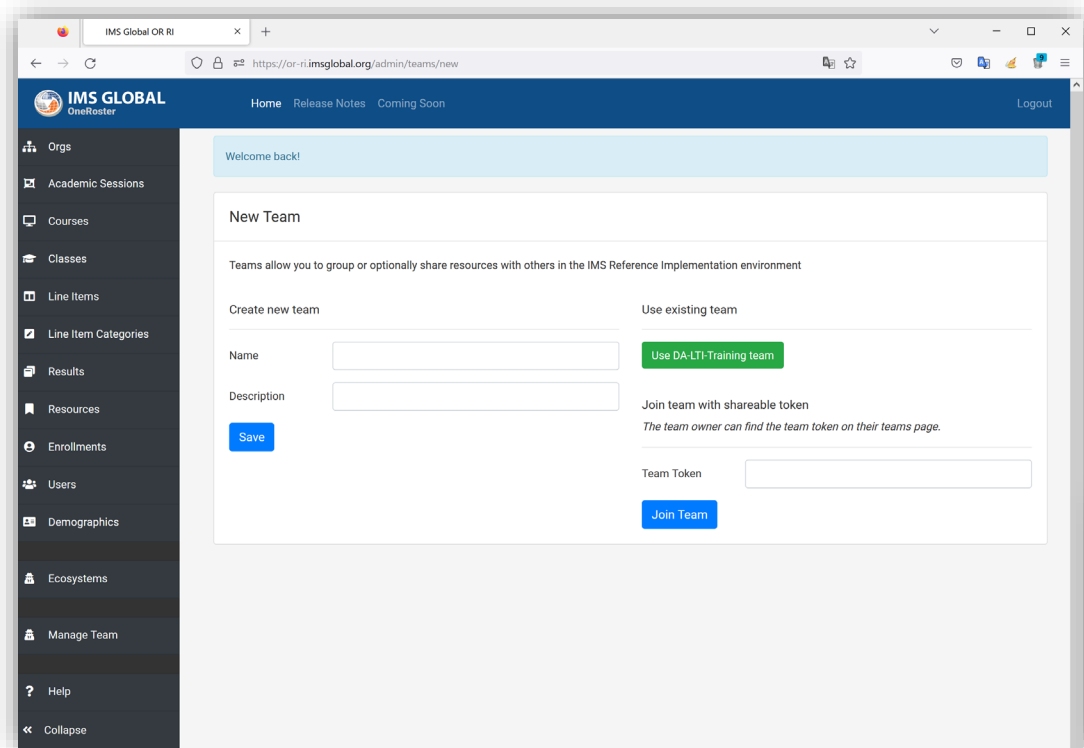
利用ポイント

- Resource Linkからツール起動プロセスごとのパラメータ確認
 - STEP1 → STEP2 → STEP3 → STEP4
- Platform/Toolの接続事前設定値についての確認
- LTI Advantage 機能の確認が可能
 - ディープリンクによる起動後に、ツール・リソース選択が可能。
 - AGS/NRPSの機能を確認可能。
- Team機能の活用
 - ログインするとチームを作成できるので、作成したプラットフォームやツールへのアクセスが容易になる。
 - チームは他のメンバとテスト環境を共有することが出来る。

Team環境へのシステム移動(Claimed)

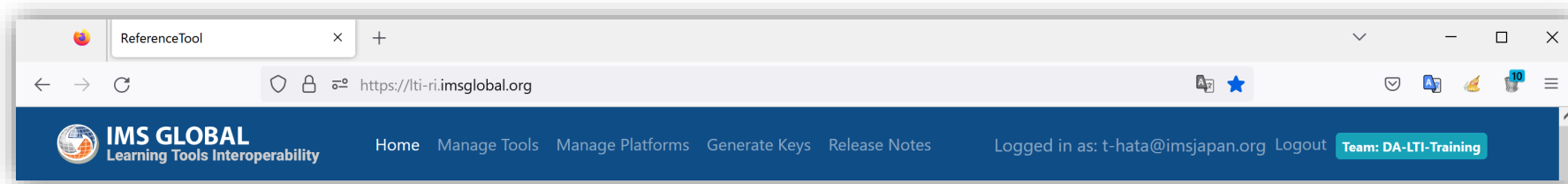


Team作成/参加



Name	Description	Team Token
DA-LTI-Training	DA2022 Project LTI Training Class	daf2dc78-f10f-451b-bd3c-1ae5ee9a2957

Listing Teams					
Id	Name	Description	Key	Secret	Team Token
279	DA-LTI-Training	DA2022 Project LTI Training Class	957d43ca-80ec-11ed-b800-22feaa8ca79f	957d4be0-80ec-11ed-b60e-22feaa8ca79f	daf2dc78-f10f-451b-bd3c-1ae5ee9a2957



トライアル

- Team「DA-LTI-Training」に参加する
- Platform から Tool を起動する
 - 新規ユーザ → 起動Claim → Tool起動
 - ユーザ選択 → 起動プロセス表示 → Tool起動
- ステップに沿って、新たなPlatformとToolを設定し連携する
 - DeepLink
 - AGS, NRPS

LTI®v1.3 RI リファレンス・インプリメンテーション テスト・ツール

Home Manage Tools Manage Platforms Generate Keys Release Notes

リソースリンク機能

LTI Platforms

Add or manage Platform configurations.

Add Platform

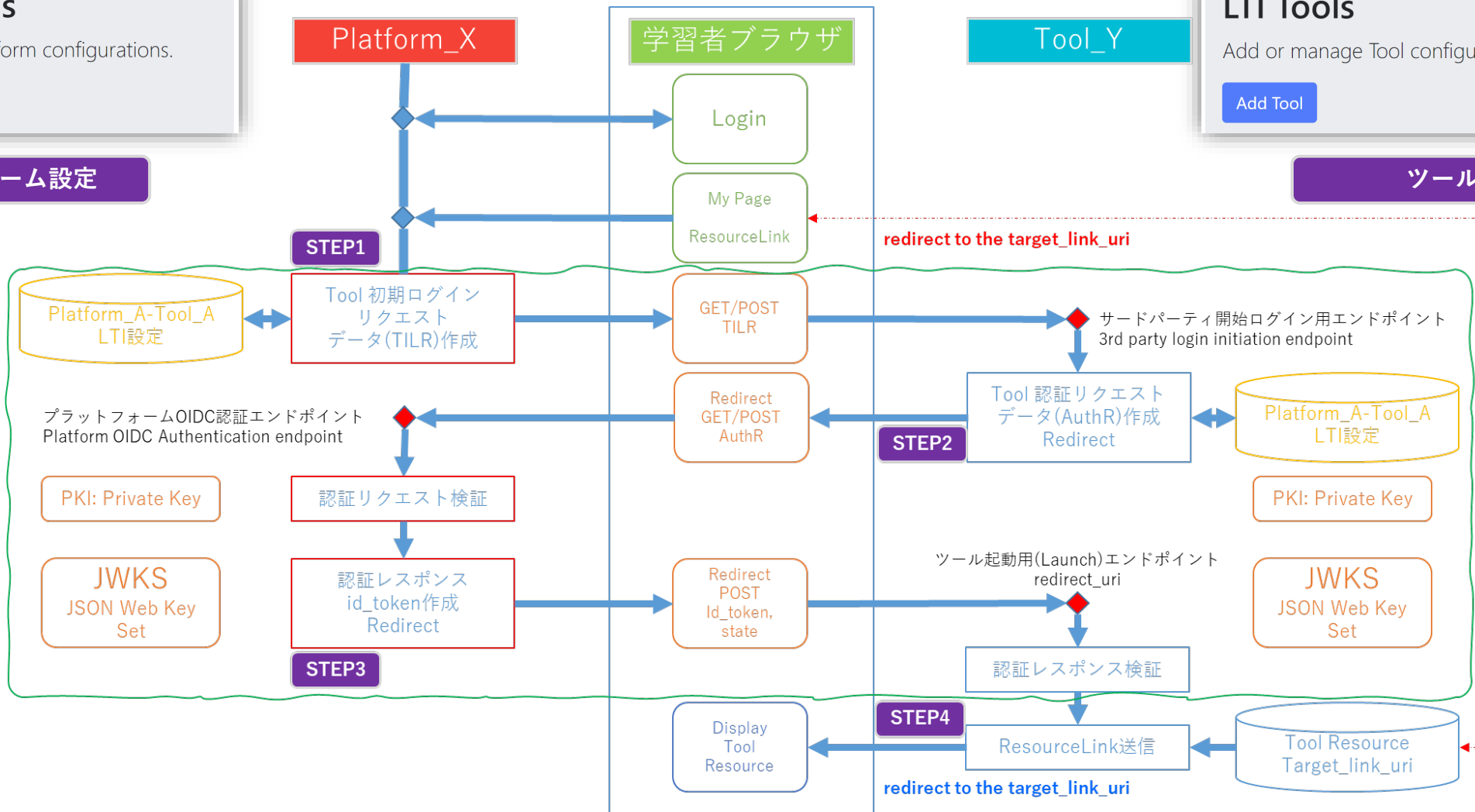
プラットフォーム設定

LTI Tools

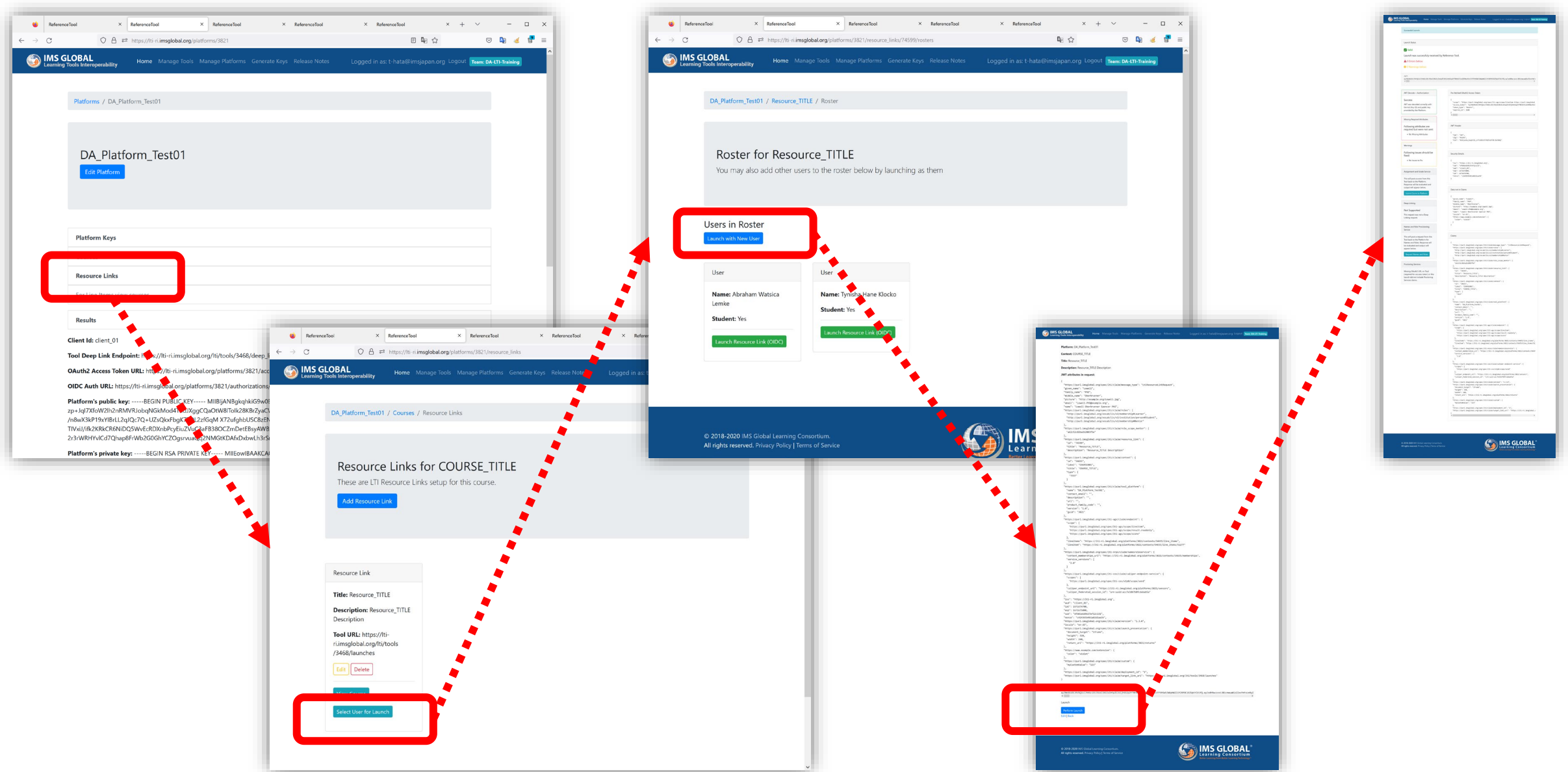
Add or manage Tool configurations.

Add Tool

ツール設定



新規ユーザ起動: New User Launch



ユーザ選択起動: User Launch

The screenshots illustrate the following steps in the IMS GLOBAL Learning Consortium interface:

- Platform Configuration:** The 'DA_Platform_Test01' page shows configuration options. A red box highlights the 'Resource Links' section.
- Resource Link Management:** The 'Resource Links for COURSE_TITLE' page allows adding links. A red box highlights the 'Add Resource Link' button.
- Roster Management:** The 'Roster for Resource_TITLE' page shows users in the roster. A red box highlights the 'Launch Resource Link (DOD)' button.
- Initiating Login:** The 'Initiating Login from Tool for Resource_TITLE' page shows login notes and a 'Tool request' button highlighted with a red box.
- Authentication Request:** The 'Make Authentication Request back to Platform DA_Tool_Test01' page shows parameters received from the platform. A red box highlights the 'Send POST request' button.
- Authentication Request Validation:** The 'Authentication Request Validation from Tool' page shows parameters received from the tool. A red box highlights the 'Launch Resource Link' button.
- Configuration Page:** A detailed configuration page for the resource link, with a red box highlighting the 'Launch Resource Link' button.

Platform自動設定

手動設定/Key Generate

Tool自動設定

Web Service : Platform X

(Platform) Name: DA_Platform_Test01
 Platform public key: -----BEGIN PUBLIC KEY----- MIIBJAN-----END PUBLIC KEY-----
 Platform well-known/jwks URL: https://lti-ri.msglobal.org/platforms/3821/platform_keys/3502.json
 Platform private key: -----BEGIN RSA PRIVATE KEY----- MIIEMeY-----END RSA PRIVATE KEY-----

Tool JWT Key Set URL: <https://lti-ri.msglobal.org/lti/tools/3468/.well-known/jwks.json>

Client Id: **client_01**
 Platform Keys Name: Key1
 Deployment ID: **1**

Course
 Id: 54655
 Label: COURSE001
 Title: COURSE_TITLE
 Type: TEST

Resource Link
 Id: 74599
 Title: Resource_TITLE
 Description: Resource_TITLE Description

Lineitems: .. /3821/contexts/54655/line_items
 Lineitem: .. /3821/contexts/54655/line_items/51277

Lineitem: 51277
 Resource link: 74599
 Resourceid: Resourceid001
 Label: LineItemLabel001
 Score maximum: 100
 Tag: LineItemTag001
 Start Date Time: 2022-12-26 00:00:00 UTC
 End Date Time: 2022-12-29 00:00:00 UTC

Login initiation url: https://lti-ri.msglobal.org/lti/tools/3468/login_initiations
 OIDC Auth URL: <https://lti-ri.msglobal.org/platforms/3821/authorizations/new>
 Tool link url(Tool URL): <https://lti-ri.msglobal.org/lti/tools/3468/launches>

Tool Deep Link Endpoint: https://lti-ri.msglobal.org/lti/tools/3468/deep_link_launches

OAuth2 Access Token URL: https://lti-ri.msglobal.org/platforms/3821/access_tokens

Web Service : Tool X

(Tool) Name: DA_Tool_Test01

Platform Keyset URL: https://lti-ri.msglobal.org/platforms/3821/platform_keys/3502.json

Tool Private Key: -----BEGIN RSA PRIVATE KEY----- JTg= -----END RSA PRIVATE KEY-----
 Tool JWT Key Set URL: <https://lti-ri.msglobal.org/lti/tools/3468/.well-known/jwks.json>

Client Id: **client_01**

Deployment ID: **1**

Tool OIDC Login Initiation URL: https://lti-ri.msglobal.org/lti/tools/3468/login_initiations
 Platform OIDC Auth URL <https://lti-ri.msglobal.org/platforms/3821/authorizations/new>
 Tool launch URL: <https://lti-ri.msglobal.org/lti/tools/3468/launches>

Tool Deep Link URL: https://lti-ri.msglobal.org/lti/tools/3468/deep_link_launches

OAuth2 URL: https://lti-ri.msglobal.org/platforms/3821/access_tokens

分類	Platform : プラットフォーム			Tool : ツール		
	名称	例	説明	名称	例	説明
ID	ID/Name		RI管理名称	ID/Name		RI管理名称
	iss registration.issuer		Platform識別URL	iss registration.issuer		Tool識別URL
	deployment ID	1	サブ識別子	Client ID	client001	サブ識別子
エンドポイント URL				OIDC Login Initiation URL		①初期ログイン URL
	authorization_reque st_endpoint		OIDC 認証エンドポイント			
				target_link_url		リソースリンク起動用 エンドポイント
				target_link_url		DeepLink起動用 エンドポイント
	launch return_url URL					
	OAuth2 Access Token URL					
PKI	Public Key		Generate Key			Generate Key
	Private Key		Generate Key			Generate Key
	JWT Key Set URL		jwtks_uri	JWT Key Set URL		jwtks_uri

Platform – Tool Properties Pair Comparison

Web Service : Platform X

Web Service : Tool X

Platform Name	Tool Name
Tool Client ID	
Tool Deployment ID	
Platform OIDC Auth URL	Tool OIDC Login Initiation URL
Platform launch return_url URL	Tool launch URL
Platform OAuth2 Access Token URL	Tool Deep Link URL
Platform Private Key	Tool Private Key
Platform Public Key	Tool Public Key
Platform JWT Key Set URL	Tool JWT Key Set URL
Platform User Info	N/A
Platform Context Info	Tool Context Info(Resource)

Input value
 Generate Keys
 RI Generate & Assigned

LTI®v1.3 RI リファレンス・インプリメンテーション テスト・ツール

Home Manage Tools Manage Platforms Generate Keys Release Notes

ディープリンク機能

LTI Platforms

Add or manage Platform configurations.

Add Platform

プラットフォーム設定

Platform_X

学習者ブラウザ

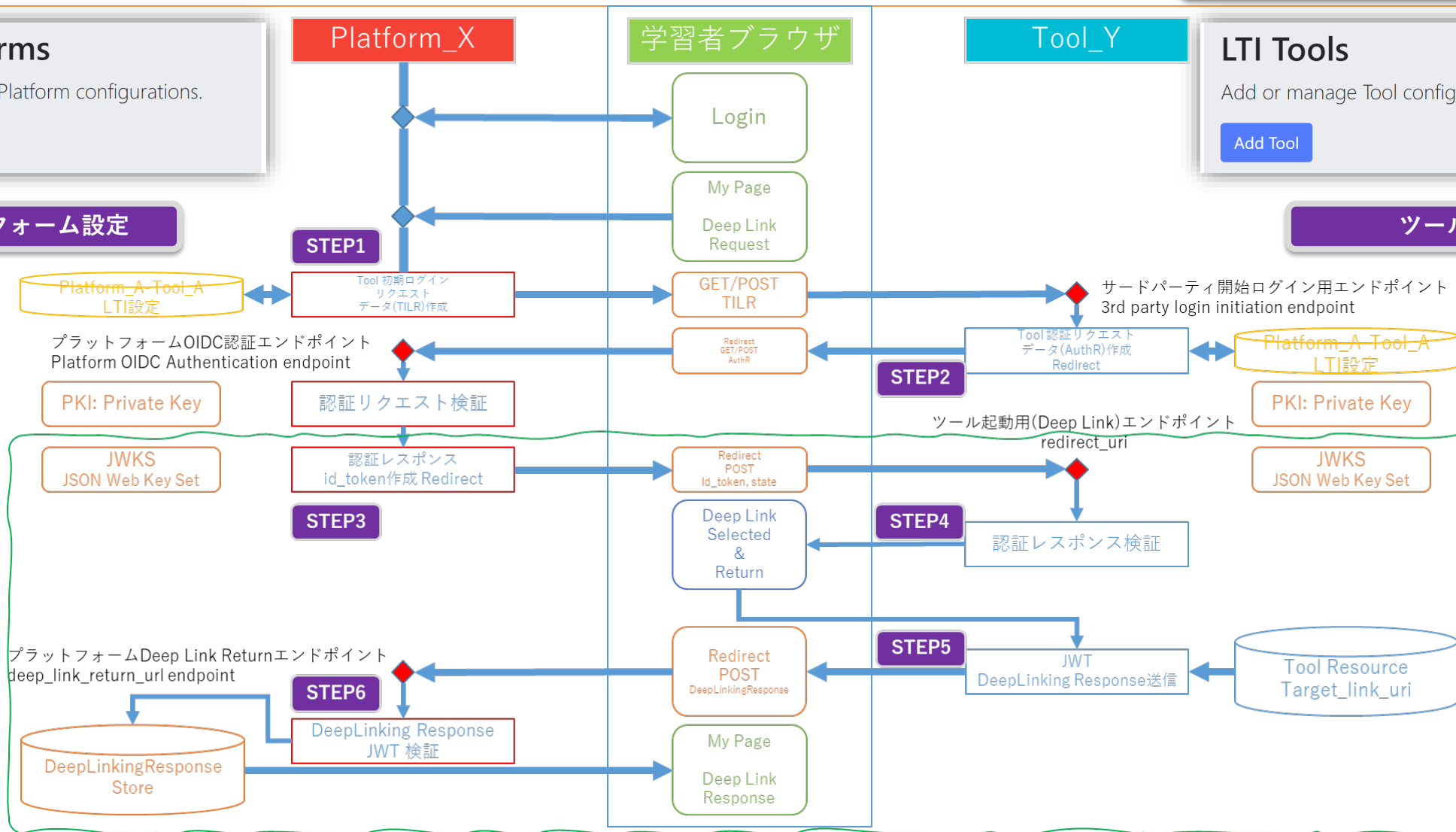
Tool_Y

LTI Tools

Add or manage Tool configurations.

Add Tool

ツール設定



RI : Reference Implementation

リファレンス・インプリメンテーション

1EDTECH LTI 1.3 実装支援ツール INSTRUCTIONS STEP1~5詳細補足

LTI[®] v1.3 Reference Implementation

STEP -1: RI Login & Team

- ① ブラウザでRI URLにアクセスします。

<https://lti-ri.imsglobal.org/>

- ② ヘッダのナビゲーション・メニューを確認します。

Home

Manage Tools

Manage Platforms

Generate Keys

Release Notes

Login/Logout

- ③ 『Login』ボタンを選択します。

New Team画面が表示されます。

新規にチームを作成したり、既存チームを選択したり、team tokenを入力して『Join Team』ボタンを選択して、共有チームに参加することが出来ます。

LTI[®] v1.3 Reference Implementation

STEP 0: RI Home 表示・翻訳

- ① ブラウザでRI URLにアクセスします。

<https://lti-ri.imsglobal.org/>

- ② ヘッダのナビゲーション・メニューを確認します。

Home

Manage Tools

Manage Platforms

Generate Keys

Release Notes

Login/Logout

- ③ Home画面を翻訳する場合は、新規ブラウザ・タブにHomeを複製します。

Homeメニュー上でマウス右クリックによりコンテキストメニューを表示

「リンクを新しいタブで開く」を選択

画面翻訳

Step 1: Generate public / private key pair

STEP 1:公開鍵と秘密鍵のペアを生成する

- ① 新規ブラウザ・タブに「Generate Keys」画面を開きます。
Step 1説明内の「Generate Keys」リンクを選択します。
- ② 新規タブのGenerate Keys画面にKeyが表示されている事を確認します。
PRIVATE KEY (画面左側)
PUBLIC KEY (画面右側)
- ③ これら2つのKEYはPlatform用として、テキストエディタにコピーして保存しておきます。
- ④ Generate Keys画面は閉じずにそのままにして、Home画面に戻ります。

Generate Keys: Platform

-----BEGIN RSA PRIVATE KEY-----

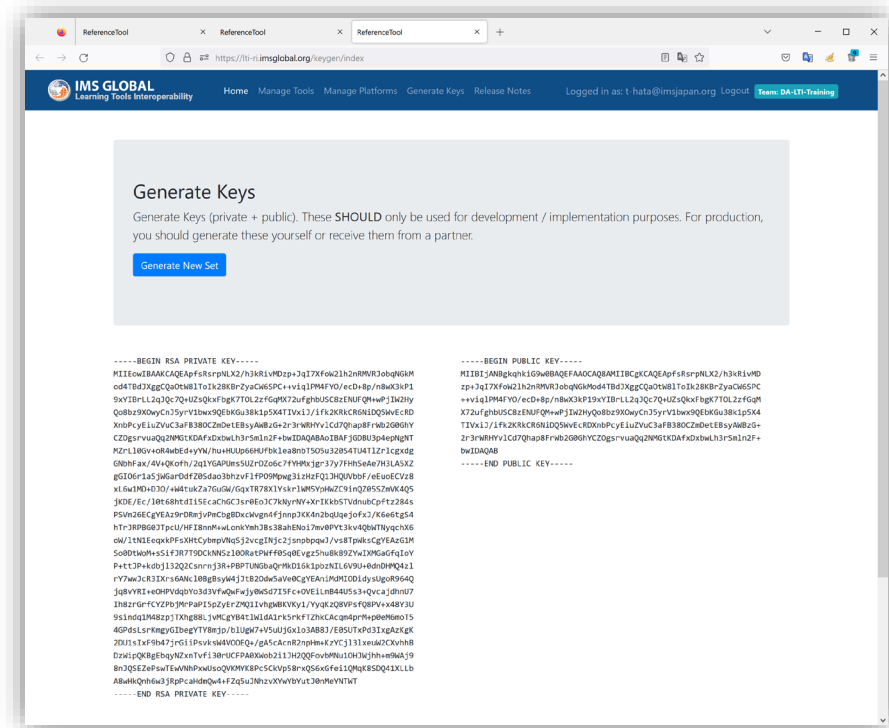
```
MIIEowIBAAKCAQEApfRsrpNLX2/h3kRivMDzp+JqI7XfoW2lh2nRMVRJobqNgkM
od4TBdJXggCQaOtW8lToIk28KBrZyaCW6SPC++viqIPM4FYO/ecD+8p/n8wX3kP1
9xYIBrLL2qJQc7Q+UZsQkxFbgK7TOL2zfGqMX72ufghbUSC8zENUFQM+wPjIW2Hy
Qo8bz9XOwyCnJ5yrV1bwx9QEbKGu38k1p5X4TIVxiJ/IFk2KRkCR6NiDQ5WvEcRD
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jKDE/Ec/l0t68htdi5EcaChGCJsr0EoJC7kNyrNY+XrIKkbSTVdnuCpftz284s
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jq8vYRI+eOHPVdqbyo3d3VfwQwFwj0WSd7I5Fc+OVEiLmB44U5s3+QvcajdhU7
Ih8zrGrfCYZPbjMrPaPI5pZyErZMQ1IvhgWBKVKy1/YyqKzQ8VPsfQ8PV+x48Y3U
9sindq1M48zpjTXhg88LjvMCgYB4tlWldA1rk5rkfTzhkCAcqm4prM+p0eM6moT5
4GPdsLsrKmgYGIbegYTY8mjp/blUgW7+V5uUjGxlo3AB8J/E0SUTxPd3IxgAzKgK
2DU1sIx9Fb47jrGiiPsvksW4V00EQ+/gA5cAcnR2npHm+KzYCj13xeuW2CXvhhB
DzWipQKBgEbqyNZxnTvfi30rUCFPA0XWob2i1JH2QQFovbMNU1OHJWjhh+m9WAj9
8nJQSEZePswTEwVNhPxwUsoQVKMYK8Pc5CkVp58rxQS6xGfeilQMqK8SDQ41XLLb
A8wHkQnh6w3jRpPcaHdmQw4+FZq5uJNhzvXYwYbYutJ0nMeYNTWT
```

-----END RSA PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEApfRsrpNLX2/h3kRivMD
zp+JqI7XfoW2lh2nRMVRJobqNgkMod4TBdJXggCQaOtW8lToIk28KBrZyaCW6SPC
++viqIPM4FYO/ecD+8p/n8wX3kP19xYIBrLL2qJQc7Q+UZsQkxFbgK7TOL2zfGqM
X72ufghbUSC8zENUFQM+wPjIW2HyQo8bz9XOwyCnJ5yrV1bwx9QEbKGu38k1p5X4
TIVxiJ/IFk2KRkCR6NiDQ5WvEcRDXnbPcyEiuZVuC3aFB38OCZmDetEBsyAWBzG+
2r3rWRHYvICd7Qhap8FrWb2G0GhYCYZOgsrvuaQq2NMGTkDAfxDxbwLh3rSmln2F+
bwIDAQAB
```

-----END PUBLIC KEY-----



Public Key to JWK: Platform

<https://russelldavies.github.io/jwk-creator/>

https://lti-ri.msglobal.org/platforms/3821/platform_keys/3502.json

```
{
  "keys": [
    {
      "kty": "RSA",
      "e": "AQAB",
      "n": "pfsRsrpNLX2_h3kRivMDzp-
JqI7XfoW2lh2nRMVRJobqNGkMod4TBdJXggCQaOtW8IToIk28KBrZyaC
W6SPC--viqIPM4FYO_ecD-8p_n8wX3kP19xYIBrLL2qJQc7Q-
UZsQkxFbgK7TOL2zfGqMX72ufghbUSC8zENUFQM-
wPjIW2HyQo8bz9XOwyCnJ5yrV1bwx9QEbkGu38k1p5X4TIVxiJ_ifk2KRk
CR6NiDQ5WvEcRDXnbPcyEiuZVuC3aFB38OCZmDetEBsyAWBzG-
2r3rWRHYvICd7Qhap8FrWb2G0GhYczOgsrvuaQq2NMgtKDAfxDxbwLh3
rSmln2F-bw",
      "kid": "8zKjva3a_buqbJ2l_zr7LUGInIYJGZYubTO8-
DeJdbQ",
      "alg": "RS256",
      "use": "sig"
    }
  ]
}
```

```
-----BEGIN PUBLIC KEY-----
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEApfsRsrpNLX2/h3kRivMD
zp+JqI7XfoW2lh2nRMVRJobqNGkMod4TBdJXggCQaOtW8IToIk28KBrZyaCW6SPC
++viqIPM4FYO/ecD+8p/n8wX3kP19xYIBrLL2qJQc7Q+UZsQkxFbgK7TOL2zfGqM
X72ufghbUSC8zENUFQM+wPjIW2HyQo8bz9XOwyCnJ5yrV1bwx9QEbkGu38k1p5X4
TIVxiJ/ifk2KRkCR6NiDQ5WvEcRDXnbPcyEiuZVuC3aFB38OCZmDetEBsyAWBzG+
2r3rWRHYvICd7Qhap8FrWb2G0GhYczOgsrvuaQq2NMgtKDAfxDxbwLh3rSmln2F+
bwIDAQAB
-----END PUBLIC KEY-----
```

JWK Creator

Create a [JSON Web Key \(JWK\)](#) from an RSA private or public key.

This tool is for existing keys. If you want to generate a new key and the corresponding JWK then use [mkjwk](#)

This works on RSA keys only and expects them to be encoded in PEM format. If you have a certificate, you'll need to extract the public key: `openssl x509 -in certificate.pem -pubkey -noout`

Options

Public Key Use:

Algorithm:

Key ID:

PEM encoded key:

JWK

```
{
  "kty": "RSA",
  "n": "pfsRsrpNLX2_h3kRivMDzp-JqI7XfoW2lh2nRMVRJobqNGkMod4TBdJXggCQaOtW8IToIk28KBrZyaC
W6SPC--viqIPM4FYO/ecD+8p_n8wX3kP19xYIBrLL2qJQc7Q+UZsQkxFbgK7TOL2zfGqMX72ufghbUSC8zENUFQM-
wPjIW2HyQo8bz9XOwyCnJ5yrV1bwx9QEbkGu38k1p5X4TIVxiJ_ifk2KRkCR6NiDQ5WvEcRDXnbPcyEiuZVuC3aFB38OCZmDetEBsyAWBzG-
2r3rWRHYvICd7Qhap8FrWb2G0GhYczOgsrvuaQq2NMgtKDAfxDxbwLh3rSmln2F-bw",
  "e": "AQAB",
  "alg": "RS256",
  "kid": "8zKjva3a_buqbJ2l_zr7LUGInIYJGZYubTO8-DeJdbQ",
  "use": "sig"
}
```


mkjwk: simple JSON Web Key generator

<https://mkjwk.org/>

mkjwk
simple JSON Web Key generator

A JSON Web Key (JWK) is a cryptographic key or keypair expressed in JSON format. This site offers a mechanism to easily generate random keys for use in servers and other projects.

This server will *never log or store any generated keys*. The source code for this server is available on GitHub for inspection and re-use. If you would like to generate your own key locally (so as not to trust a remote service with your secret keys), you can use the command line utility version of the library that powers this site.

Key Size: 2048 | Key Use: Signature | Algorithm: RS256: RSA | Key ID: SHA-256 | Show X.509: No | **Generate**

Public and Private Keypair

```
{
  "p": "_rnzkqbDRrxeYiwIwjfy6QXx2t9ZNgg1y-NbD8GnpURz",
  "kty": "RSA",
  "q": "-uWVbj9iG0DggK5PSCZvxSg6TY3LGYAvQ17U9IzASGFA",
  "d": "bxImBn3VG72jLI1Jk7EieG6rJ-1X2EUQs57P5ZqQNDMU",
  "e": "AQAB",
  "use": "sig",
  "kid": "n3K_iVC52nscLdpgJpp3WCkacwOSWUTMGPAxhLLpMR",
  "qi": "UKMguPL9Uizk1A0ftWIXBxG_GZDoIt1PHKadnbnBodk",
  "dp": "Qj_wxqKsXvH2pkfXgEdoJesC5S8Tz8BA3x9prqZrUxe",
  "alg": "RS256",
  "dq": "Fxav1LCyh1Wsc2UXGK2o1X0kHeTxjsw0D5iK8mJNg5u",
  "n": "-aYI5AbGQrcQ291aSDGAbSjtd198kE_eehy8rqjZds8"
}
```

Copy to Clipboard

Public and Private Keypair Set

```
{
  "keys": [
    {
      "p": "_rnzkqbDRrxeYiwIwjfy6QXx2t9ZNgg1y-NbD8GnpURz",
      "kty": "RSA",
      "q": "-uWVbj9iG0DggK5PSCZvxSg6TY3LGYAvQ17U9IzASGFA",
      "d": "bxImBn3VG72jLI1Jk7EieG6rJ-1X2EUQs57P5ZqQNDMU",
      "e": "AQAB",
      "use": "sig",
      "kid": "n3K_iVC52nscLdpgJpp3WCkacwOSWUTMGPAxhLLpMR",
      "qi": "UKMguPL9Uizk1A0ftWIXBxG_GZDoIt1PHKadnbnBodk",
      "dp": "Qj_wxqKsXvH2pkfXgEdoJesC5S8Tz8BA3x9prqZrUxe",
      "alg": "RS256",
      "dq": "Fxav1LCyh1Wsc2UXGK2o1X0kHeTxjsw0D5iK8mJNg5u",
      "n": "-aYI5AbGQrcQ291aSDGAbSjtd198kE_eehy8rqjZds8"
    }
  ]
}
```

Copy to Clipboard

Public Key

```
{
  "kty": "RSA",
  "e": "AQAB",
  "use": "sig",
  "kid": "n3K_iVC52nscLdpgJpp3WCkacwOSWUTMGPAxhLLpMR",
  "alg": "RS256",
  "n": "-aYI5AbGQrcQ291aSDGAbSjtd198kE_eehy8rqjZds8"
}
```

Copy to Clipboard

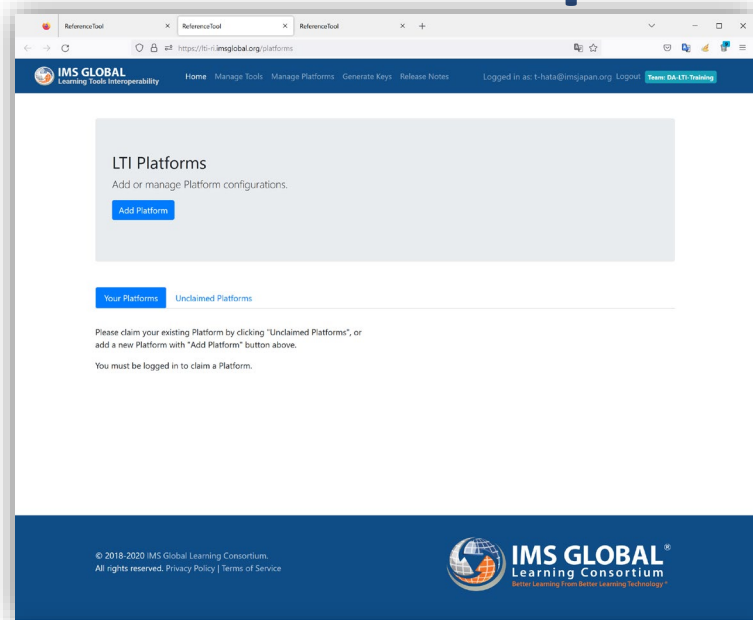
```
{
  "kty": "RSA",
  "e": "AQAB",
  "use": "sig",
  "kid": "n3K_iVC52nscLdpgJpp3WCkacwOSWUTMGPAxhLLpMR",
  "alg": "RS256",
  "n": "-aYI5AbGQrcQ291aSDGAbSjtd198kE_eehy8rqjZds8JJ2Y5h1dzqJzC1VWdUa7bY8o7F4oY8kqkTvw9p5npodJjVEOnRAzTPJRtXKXWfbuAwjZSK_wCqQLOgs_clyQJ1eijdY8skbBefD2H86iLUdMAZEWaiUfFF8zRBiZsj3htOJ2QZRy4_732b2Yf7SwH3uOFTJQHu1mDkPslsqkYDfzEnKGzZQVr3fK9fYRWWQansrPJVBGZnDT7oY7yPk3OjnXrYWDeA6eN_iQ1VHp9smCB8f65DdeoeDO24gk_OMZgi5dizq9FrXNpl56HMYOzfARbmC10ztRWW9Q3EZw"
}
```

Step 2: Create Platform (LMS)

STEP 2:プラットフォーム (LMS) を作成する

- ① 新規ブラウザ・タブに「Manage Platforms」画面を開きます。
Step 2(1.)説明内の「Manage Platforms」リンクを選択します。
- ② Platformを新規に追加します。
『Add Platform』ボタンを選択します。
- ③ 『Name』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : DA_Platform_Test01 Nameはメモしておきます。
- ④ 『Client』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : client_01 Clientはメモしておきます。
- ⑤ 『Audience』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : <https://lti-ri.imsglobal.org>

Step 2: Create Platform (LMS)



IMS GLOBAL Learning Tools Interoperability

Home Manage Tools Manage Platforms Generate Keys Release Notes

Logged in as: t-hata@imsjapan.org Logout [Team DA LTI Training](#)

LTI Platforms

Add or manage Platform configurations.


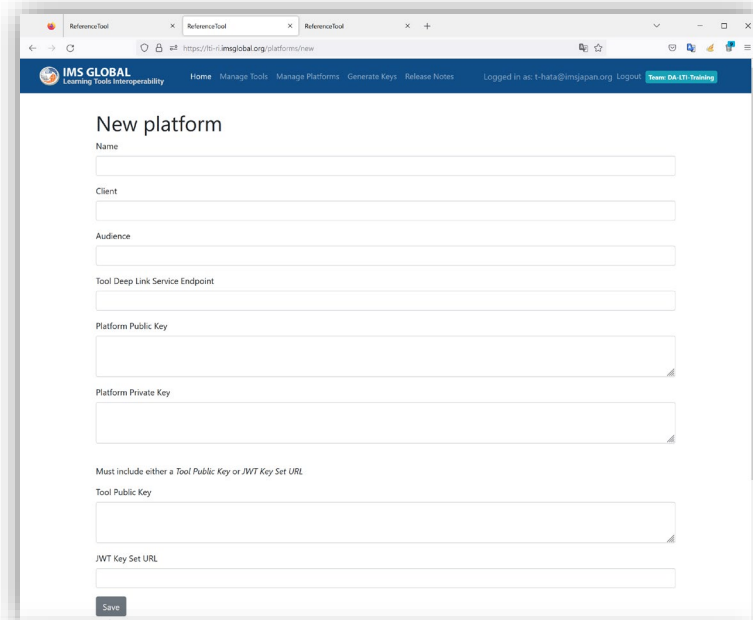
[Add Platform](#)

Your Platforms Unclaimed Platforms

Please claim your existing Platform by clicking "Unclaimed Platforms", or add a new Platform with "Add Platform" button above.

You must be logged in to claim a Platform.

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New platform

Name

Client

Audience

Tool Deep Link Service Endpoint

Platform Public Key

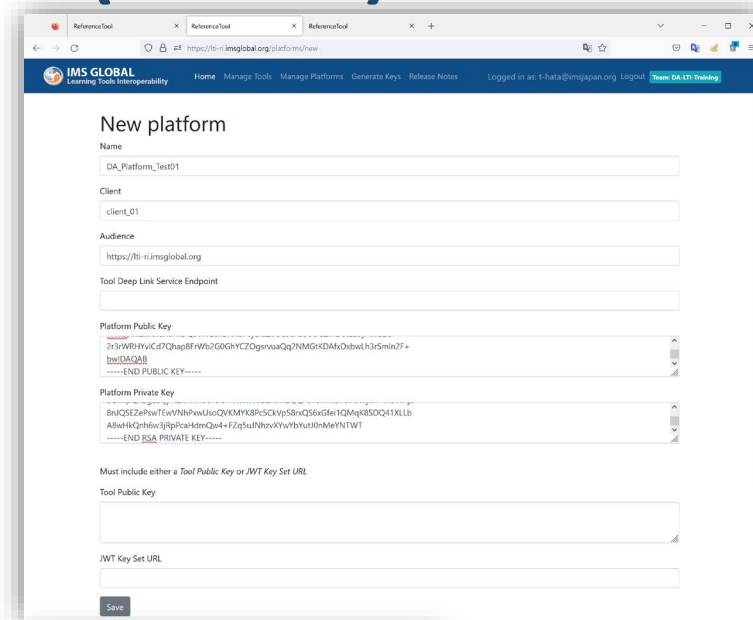
Platform Private Key

Must include either a Tool Public Key or JWT Key Set URL

Tool Public Key

JWT Key Set URL

[Save](#)



New platform

Name

DA_Platform_Test01

Client

client_01

Audience

https://lms-ri.imsjglobal.org

Tool Deep Link Service Endpoint

Platform Public Key

2f3rWbHYvcG7QhapBFHw62GGHYCZOgrvuaQq7NMGSIDAMd8vln35minZf+
-----END PUBLIC KEY-----

Platform Private Key

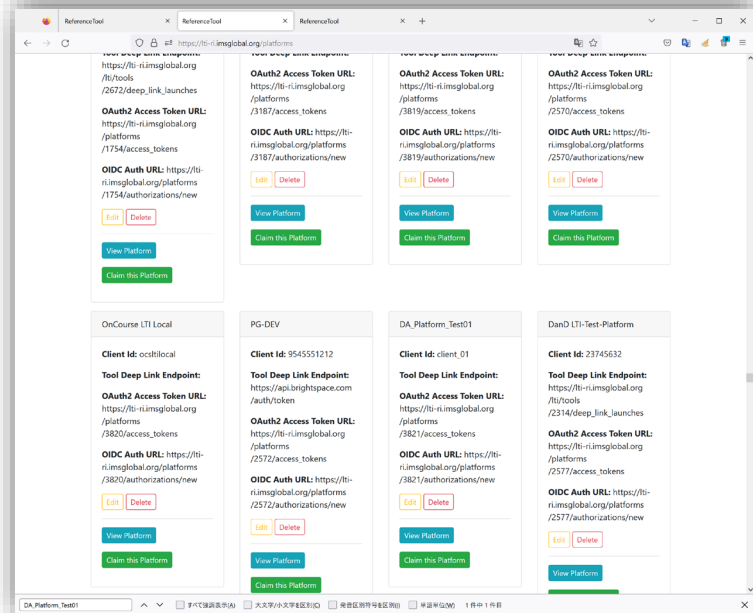
8a1C5CZaFwT54vNhhUosCvKMYKBP5cN1p58vQ56vGle1QMogGSDQ1XLLb
ABw4kQch6w3jRpPcaIkmQv4+FZg5ulNhwXyYbYus0mMeYNTWT
-----END RSA PRIVATE KEY-----

Must include either a Tool Public Key or JWT Key Set URL

Tool Public Key

JWT Key Set URL

[Save](#)



OnCourse LTI Local

Client Id: oca10cal

Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:

View Platform

Claim this Platform

PG-DEV

Client Id: 9545551212

Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:

View Platform

Claim this Platform

DA_Platform_Test01

Client Id: client_01

Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:

View Platform

Claim this Platform

DanD LTI-Test-Platform

Client Id: 23745632

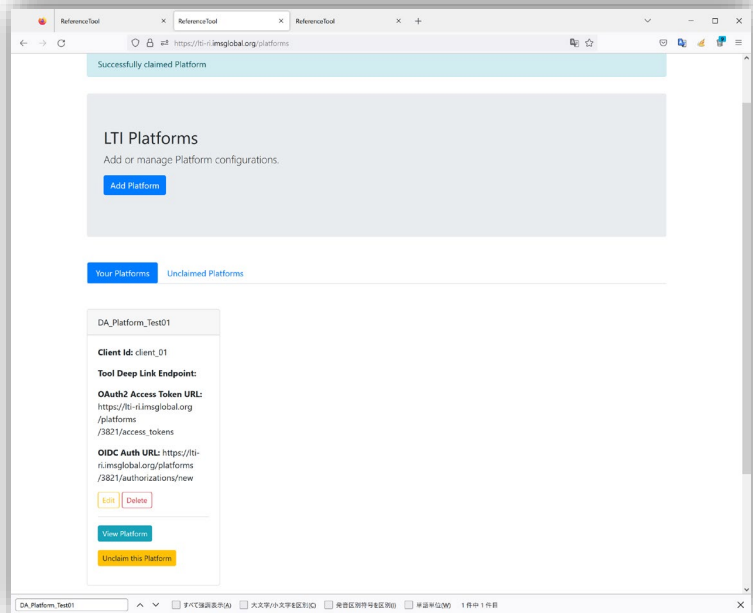
Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:

View Platform

Claim this Platform



Successfully claimed Platform

LTI Platforms

Add or manage Platform configurations.

[Add Platform](#)

Your Platforms Unclaimed Platforms

DA_Platform_Test01

Client Id: client_01

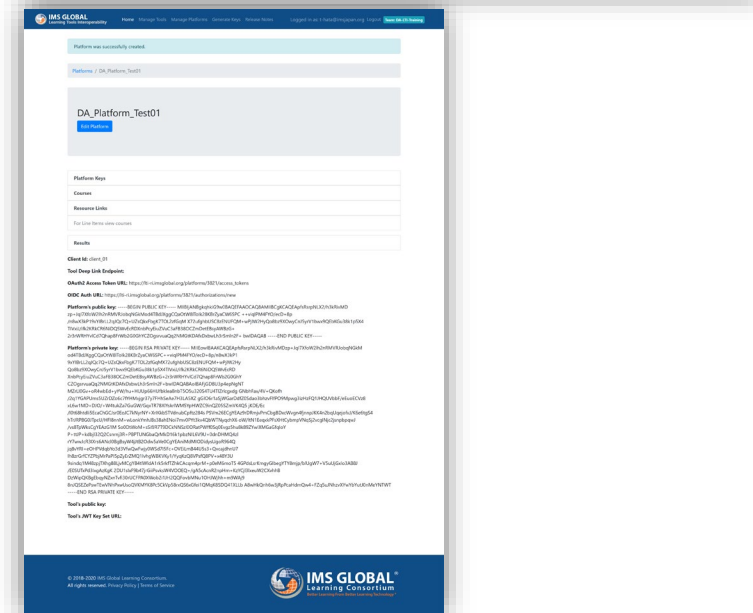
Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:

View Platform

Unclaim this Platform



Platform was successfully created.

Platform: DA_Platform_Test01

[View Platform](#)

Platform Key:

Client:

Resource Links:

Results:

Client Id: client_01

Tool Deep Link Endpoint:

OAuth2 Access Token URL:

OIDC Auth URL:


Platform public key:

Platform private key:

Tool Public Key:

Tool JWT Key Set URL:

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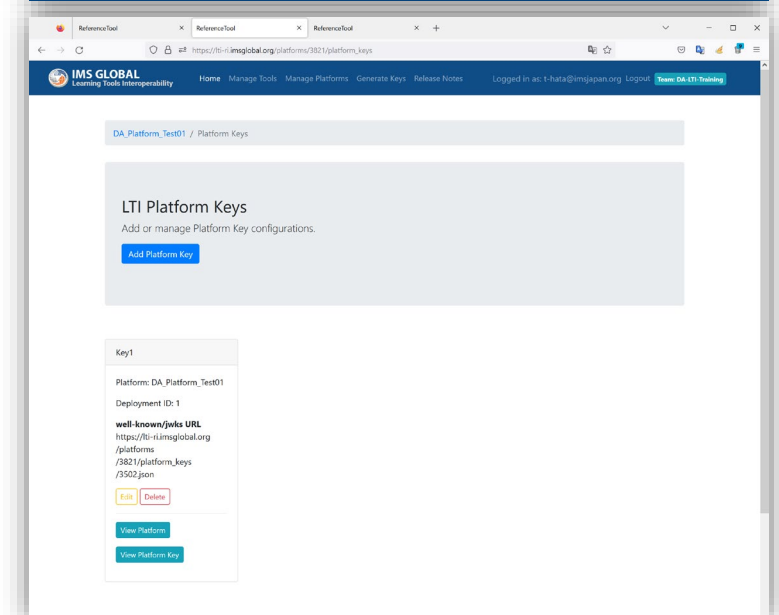
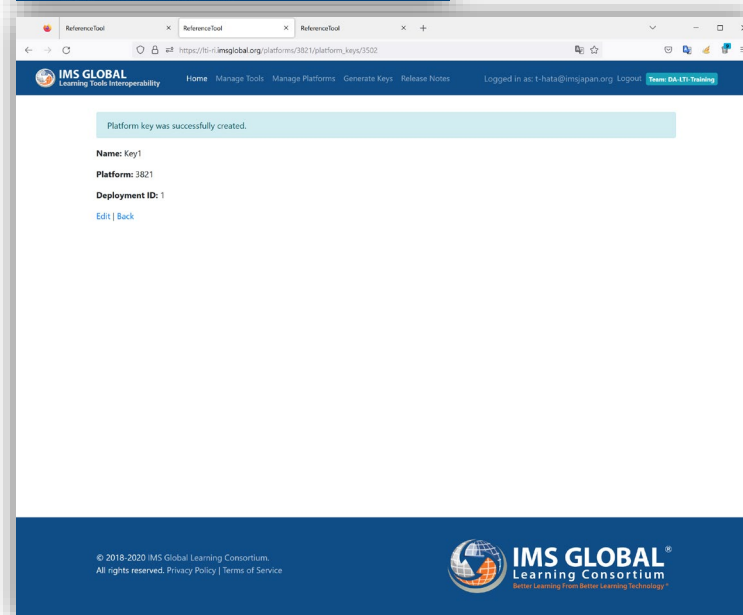
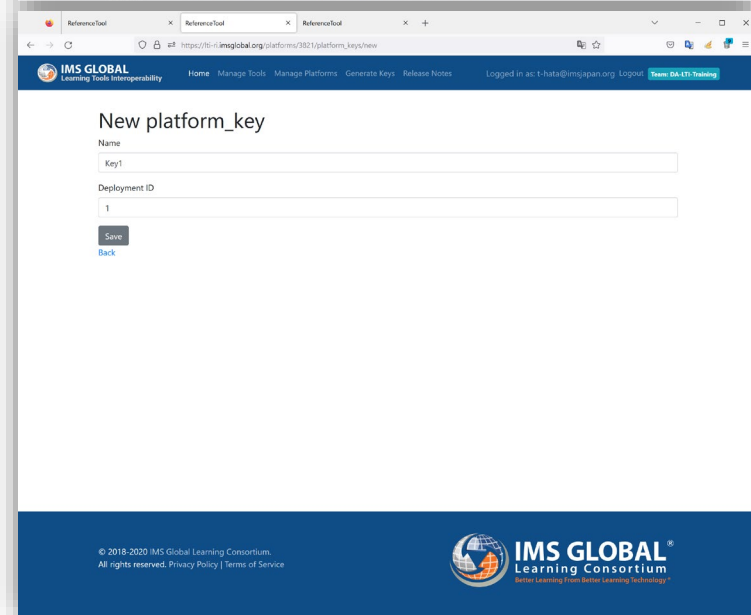
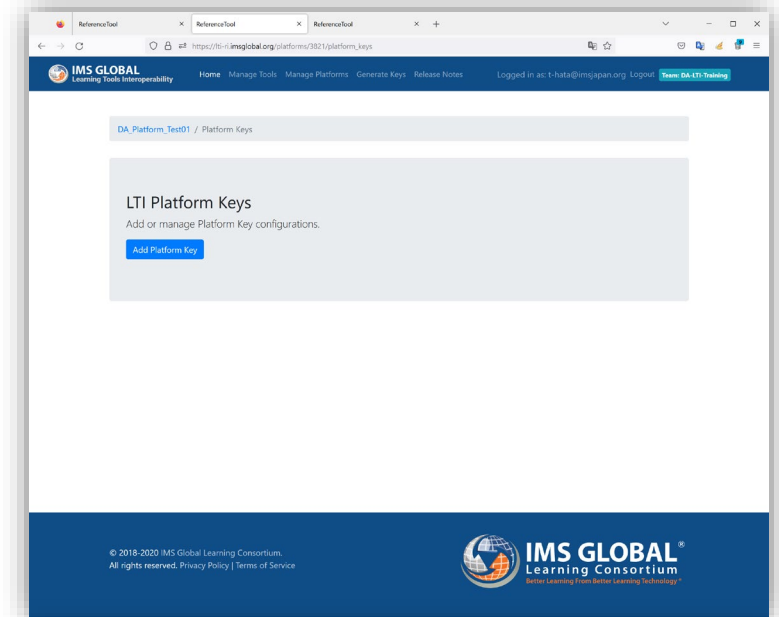
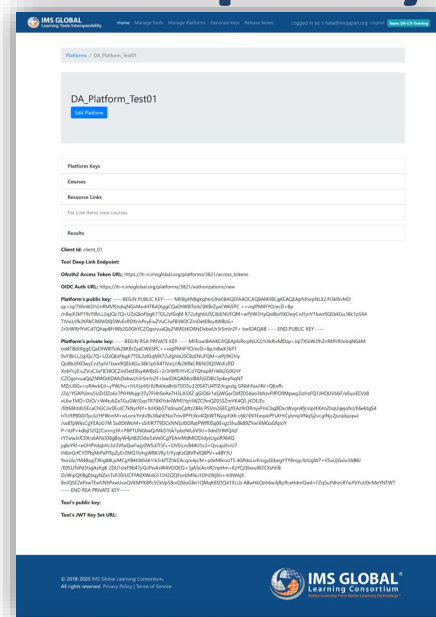
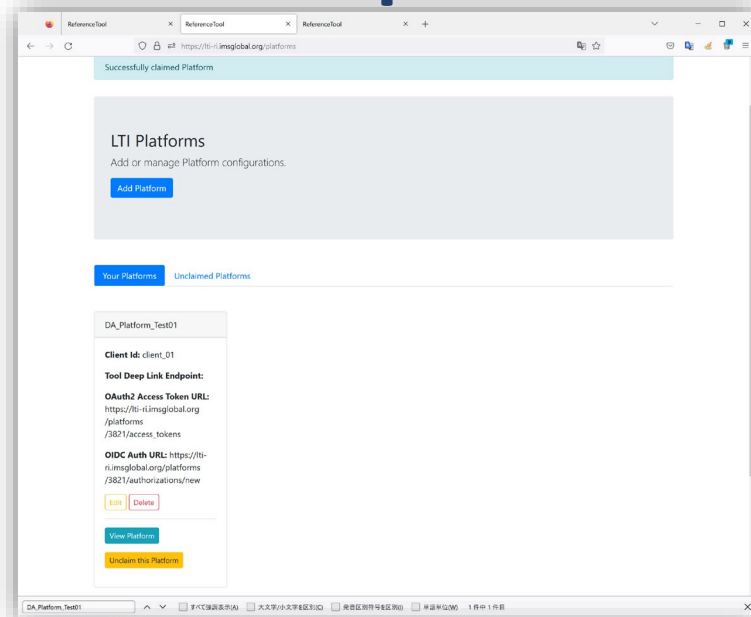


Step 3: Add Deployment to Platform

STEP 3: 作成したプラットフォームにデプロイメントIDを設定する

- ① 先ほど作成したPlatformを「Your Platforms」一覧に追加します。
『Unclaimed Platform』タブを選択し「Ctrl-F」によりページ内を文字検索します。
Platformの情報カード『Claim this Platform』ボタンを選択します。
- ② 先ほどのPlatformの情報を表示します。
「Your Platforms」一覧情報カードの『View Platform』ボタンを選択します。
- ③ デプロイメントID(Keys)を設定します。
『Platform Keys』アコーディオン・ボタンを選択します。
- ④ デプロイメントID(Keys)を設定します。
『Add Platform Key』ボタンを選択します。
- ⑤ 『Name』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : Key1 Nameはメモしておきます。
- ⑥ 『Deployment ID』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : 1
- ⑦ 『Save』ボタンを選択します。

Step 3: Add Deployment to Platform



Step 2: Create Platform (LMS)

STEP 2:プラットフォーム (LMS) を作成する

- ⑥ 『Platform Public Key』テキスト入力欄に、Step1で作成したPublic Keyをコピーします。
「-----BEGIN PUBLIC KEY-----」や「-----END PUBLIC KEY-----」も含めます。
- ⑦ 『Platform Private Key』テキスト入力欄に、Step1で作成したPrivate Keyをコピーします。
「-----BEGIN RSA PRIVATE KEY-----」や「-----END RSA PRIVATE KEY-----」も含めます。
- ⑩ 『Save』ボタンを選択します。

補足: ⑧,⑨について

『Tool Deep Link Service Endpoint』テキスト入力欄は、Tool作成後に入力します。

『JWT Key Set URL』テキスト入力欄は、Tool作成後に入力します。

『Tool Public Key』テキスト入力欄は、使用しません。ToolのPublic Keyは直接値を保持するのではなく、『JWT Key Set URL』を使用します。

Step 3: Add Deployment to Platform

STEP 3: 作成したプラットフォームにデプロイメントIDを設定する

- ① 先ほど作成したPlatformを「Your Platforms」一覧に追加します。
『Unclaimed Platform』タブを選択し「Ctrl-F」によりページ内を文字検索します。
Platformの情報カード『Claim this Platform』ボタンを選択します。
- ② 先ほどのPlatformの情報を表示します。
「Your Platforms」一覧情報カードの『View Platform』ボタンを選択します。
- ③ デプロイメントID(Keys)を設定します。
『Platform Keys』アコーディオン・ボタンを選択します。
- ④ デプロイメントID(Keys)を設定します。
『Add Platform Key』ボタンを選択します。
- ⑤ 『Name』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : Key1
- ⑥ 『Deployment ID』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : 1
Deployment IDはメモしておきます。
- ⑦ 『Save』ボタンを選択します。

Step 3: Add Deployment to Platform

STEP 3: 作成したプラットフォームにデプロイメントIDを設定する

補足: 次工程のSTEP4で使用するので、下記情報をメモしてください。

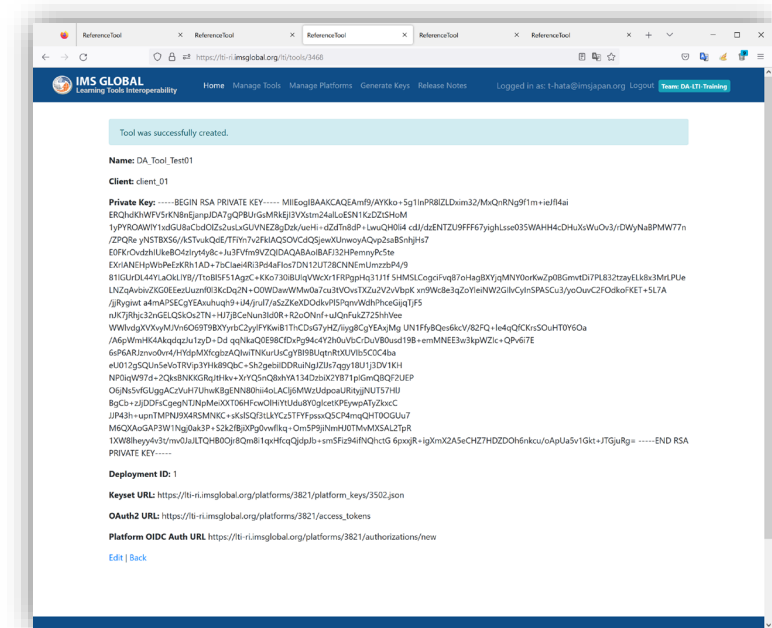
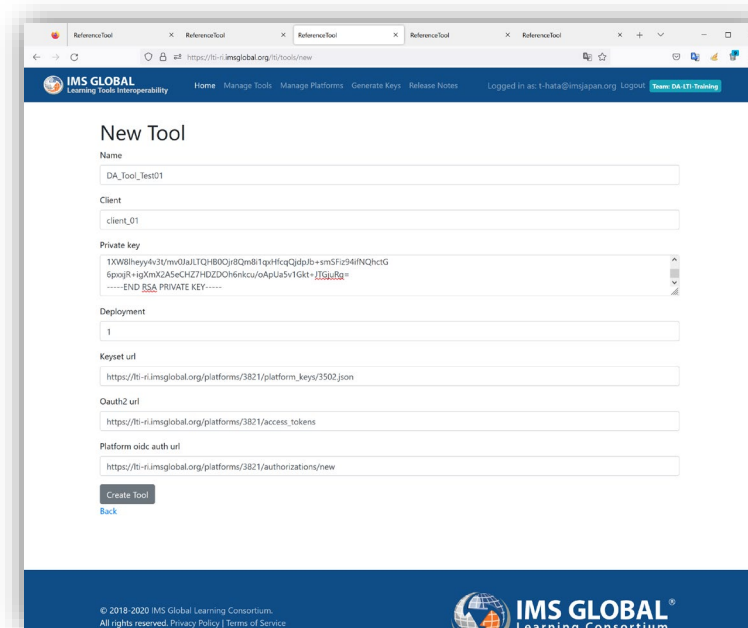
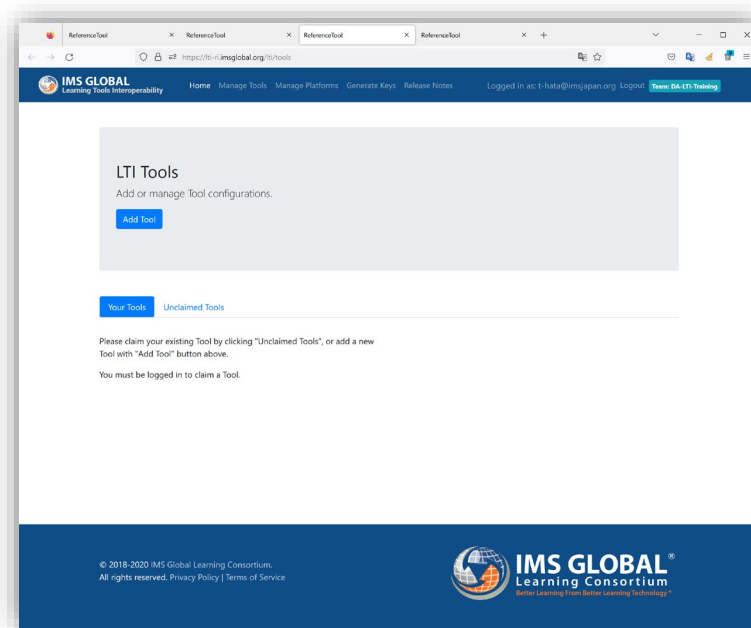
- (i) 「well-known/jwks URL」(RIが自動的に作成しています。)
「LTI Platform Keys」画面に表示されている作成したPlatform Key情報カードに記載されている
- (ii) 「OAuth2 Access Token URL」、「OIDC Auth URL」(RIが自動的に作成しています。)
Platformの情報カード『View Platform』ボタンを選択します。

Step 4: Add a Tool

STEP 4: ツールを作成する

- ① 新規ブラウザ・タブに「Manage Tools」画面を開きます。
Step 4(1.)説明内の「Manage Tools」リンクを選択します。
- ② Toolを新規に追加します。
『Add Tool』ボタンを選択します。
- ③ 『Name』テキスト入力欄に、自分が識別しやすい適当な名前を入力します。
(例) : DA_Tool_Test01 Nameはメモしておきます。
- ④ 『Client』テキスト入力欄に、Platform作成時に決めたClient idを入力します。
(例) : client_01
- ⑥ 『Deployment』テキスト入力欄に、Platform Key作成時に決めたDeployment idを入力します。
(例) : DeploymentID_DA20221202

Step 4: Add a Tool



Generate Keys: Tool

-----BEGIN RSA PRIVATE KEY-----

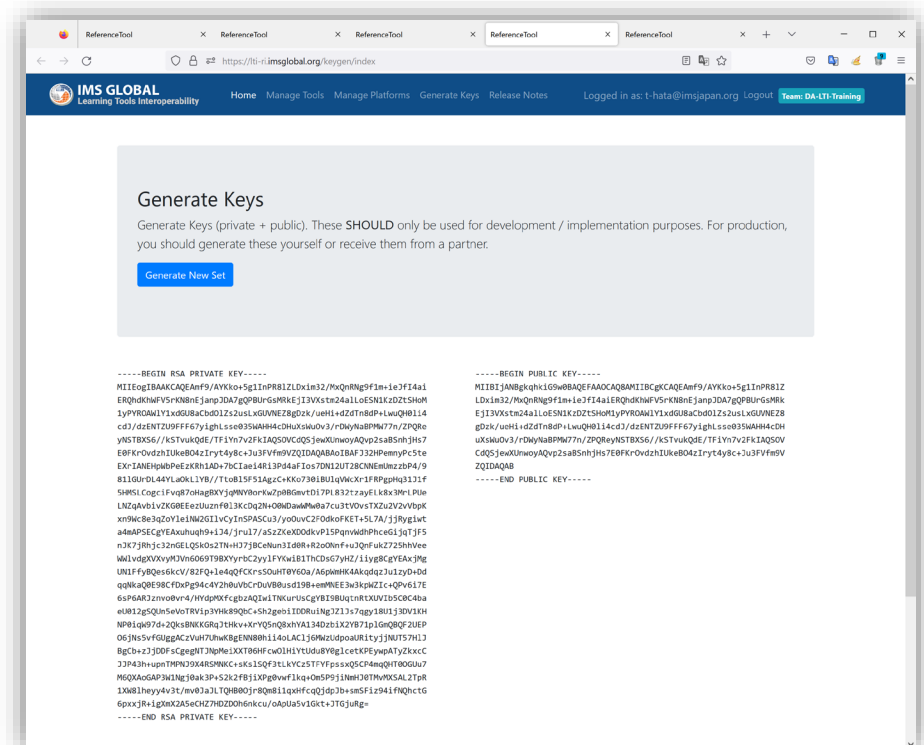
```
MIIEogIBAAKCAQEAmf9/AYKko+5glInPR8lZLDxim32/MxQnRN9f1m+ieJf14ai
ERQhdKhWfV5rKN8nEjanpJDA7gQPBUrGsMRkEjI3VXstm24alLoESN1KzDZtSHoM
1yPYROAWIY1xdGU8aCbdOlZs2usLxGUVNEZ8gDzk/ueHi+dZdTn8dP+LwuQH0li4
cdJ/dzENTZU9FFF67yighLsse035WAHH4cDHuXsWuOv3/rDWyNaBPMW77n/ZPQRe
yNSTBXS6//kSTvukQdE/TFiYn7v2FkIAQSOVCdQSjewXUnwoyAQvp2saBSnhjHs7
E0FKrOvdzhIUkeBO4zIryt4y8c+Ju3FVfm9VZQIDAQABAoIBAFJ32HPemnyPc5te
EXrIANEHpWbPeEzKRh1AD+7bClaei4Ri3Pd4aFIos7DN12UT28CNNEUmzzbP4/9
81lGUrDL44YLaoKLIYB//TtoB15F51AgzC+KKo730iBUlqVWcXr1FRPgpHq31J1f
5HMSLCogciFvq87oHagBXYjqMNY0orKwZp0BGmvtDi7PL832tzayELk8x3MrLPUE
LNZqAvbivZKG0EEezUuznf013KcDq2N+O0WDawWMw0a7cu3tVOvsTXZu2V2vVbpK
xn9Wc8e3qZoYleiNW2GIlvCyInSPAScu3/yoOuvC2FOdkoFKET+5L7A/jjRygiwt
a4mAPSECgYEAxuhuqh9+I4/jrul7/aSzZKeXDOdkvPl5PqnvWdhPhceGijqTjF5
nJK7jRhjc32nGELQSkOs2TN+HJ7jBCeNun3Id0R+R2oONnf+uJQnFukZ725hhVee
WWlvdgVXVvyMJVn6O69T9BXYyrbC2yylFYKwiB1ThCDsG7yHZ/iiyg8CgYEAxjMg
UN1FfyBQes6kcV/82FQ+le4qQfCKrsSOuHT0Y6Oa/A6pWmHK4AkqdzJu1zyD+Dd
qqNkaQ0E98CfDxPg94c4Y2h0uVbCrDuVB0usd19B+emMNEE3w3kpWZlC+QPv6i7E
6sP6ARJznvo0vr4/HYdpMXfcbzAQIwiTNKurUsCgYBI9BUqtnRtXUVIb5C0C4ba
eU012gSQUn5eVoTRVip3YHk89QbC+Sh2gebiIDDRuiNgJZlJs7qgy18U1j3DV1KH
NP0iqW97d+2QksBNKKGRqJtHkv+XrYQ5nQ8xhYA134DzbiX2YB71plGmQBQF2UEP
O6jNs5vfGUggACzVuH7UhwKBgENN80hii4oLAClj6MWzUdpoaURityjjNUT57HIJ
BgCb+zJDDFsCgegNTJNpMeiXXT06HFcwOlHiYtUdu8Y0glcetKPEywpATyZkxcC
JJP43h+upnTMPNj9X4RSMNKC+sKsISQf3tLkYCz5TFYFpsxQ5CP4mqQHT0OGUu7
M6QXAoGAP3W1Ngj0ak3P+S2k2fBjiXPg0vwlkq+Om5P9jiNmHJ0TMvMXSAL2TpR
1XW8lhey4v3t/mv0JaJLTQHB00jr8Qm8ilqxHfcqJdpJb+smSFiz94ifNQHctG
6pxjR+igXmX2A5eCHZ7HDZDOh6nkcU/oApUa5v1Gkt+JTGjuRg=
```

-----END RSA PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAmf9/AYKko+5glInPR8lZ
LDxim32/MxQnRN9f1m+ieJf14aiERQhdKhWfV5rKN8nEjanpJDA7gQPBUrGsMRk
EjI3VXstm24alLoESN1KzDZtSHoM1yPYROAWIY1xdGU8aCbdOlZs2usLxGUVNEZ8
gDzk/ueHi+dZdTn8dP+LwuQH0li4cdJ/dzENTZU9FFF67yighLsse035WAHH4cDH
uXsWuOv3/rDWyNaBPMW77n/ZPQReyNSTBXS6//kSTvukQdE/TFiYn7v2FkIAQSOV
CdQSjewXUnwoyAQvp2saBSnhjHs7E0FKrOvdzhIUkeBO4zIryt4y8c+Ju3FVfm9V
ZQIDAQAB
```

-----END PUBLIC KEY-----



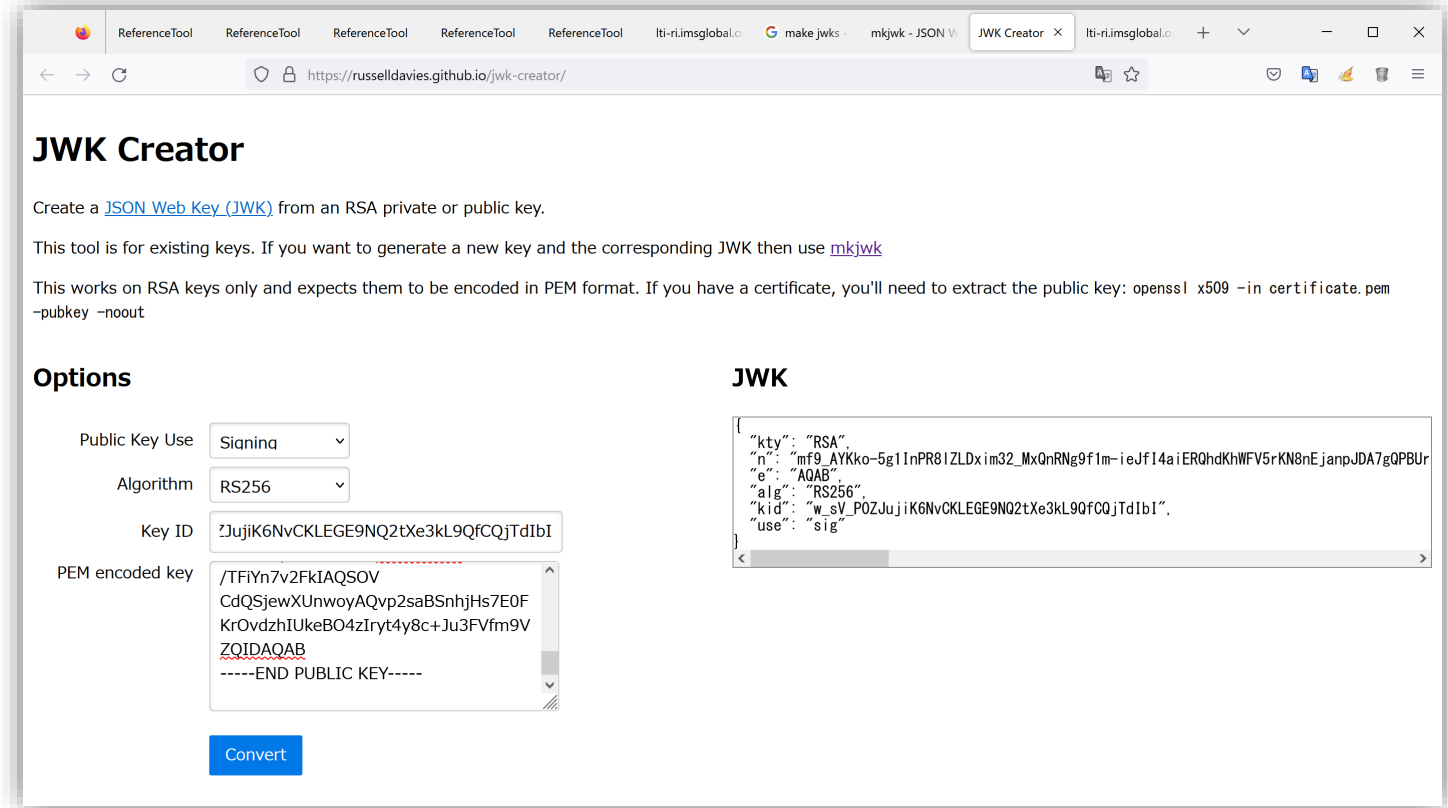
Public Key to JWK: Tool

<https://russelldavies.github.io/jwk-creator/>

<https://liti-ri.imsglobal.org/liti/tools/3468/.well-known/jwks.json>

```
{
  "keys": [
    {
      "kty": "RSA",
      "e": "AQAB",
      "n": "mf9_AYKko-5g1InPR8IZLDxim32_MxQnRN9f1m-
ieJfI4aiERQhdKhWfV5rKN8nEjanpJDA7gQPBUrGsMRkEjI3VXstm24aLL
oESN1KzDZtSHoM1yPYROAWIY1xdGU8aCbdOIZs2usLxGUVNEZ8gDzk
_ueHi-dZdTn8dP-
LwuQH0li4cdJ_dzENTZU9FFF67yighLsse035WAHH4cDHuXsWuOv3_rDW
yNaBPMW77n_ZPQReyNSTBXS6_kSTvukQdE_TFiYn7v2FkIAQSOVCdQ
SjewXUnwoyAQvp2saBSnhjHs7E0FKrOvdzhIUkeBO4zIryt4y8c-
Ju3FVfm9VZQ",
      "kid":
"w_sV_P0ZJujik6NvCKLEGE9NQ2tXe3kL9QfCQjTdIbI",
      "alg": "RS256",
      "use": "sig"
    }
  ]
}
```

```
-----BEGIN PUBLIC KEY-----
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAmf9AYKko+5g1InPR8IZ
LDxim32/MxQnRN9f1m+ieJfI4aiERQhdKhWfV5rKN8nEjanpJDA7gQPBUrGsMRk
EjI3VXstm24aLLoESN1KzDZtSHoM1yPYROAWIY1xdGU8aCbdOIZs2usLxGUVNEZ8
gDzk/ueHi+dZdTn8dP+LwuQH0li4cdJ/dzENTZU9FFF67yighLsse035WAHH4cDH
uXsWuOv3rDWyNaBPMW77n/ZPQReyNSTBXS6//kSTvukQdE/TFiYn7v2FkIAQSOV
CdQSjewXUnwoyAQvp2saBSnhjHs7E0FKrOvdzhIUkeBO4zIryt4y8c+Ju3FVfm9V
ZQIDAQAB
-----END PUBLIC KEY-----
```



JWK Creator

Create a [JSON Web Key \(JWK\)](#) from an RSA private or public key.

This tool is for existing keys. If you want to generate a new key and the corresponding JWK then use [mkjwk](#)

This works on RSA keys only and expects them to be encoded in PEM format. If you have a certificate, you'll need to extract the public key: `openssl x509 -in certificate.pem -pubkey -noout`

Options

Public Key Use:

Algorithm:

Key ID:

PEM encoded key:

JWK

```
{
  "kty": "RSA",
  "n": "mf9_AYKko-5g1InPR8IZLDxim32_MxQnRN9f1m-ieJfI4aiERQhdKhWfV5rKN8nEjanpJDA7gQPBUr
GsMRkEjI3VXstm24aLLoESN1KzDZtSHoM1yPYROAWIY1xdGU8aCbdOIZs2usLxGUVNEZ8gDzk/ueHi+dZdTn8dP+
LwuQH0li4cdJ_dzENTZU9FFF67yighLsse035WAHH4cDHuXsWuOv3_rDWyNaBPMW77n_ZPQReyNSTBXS6//kSTvukQdE/TFiYn7v2FkIAQSOV
CdQSjewXUnwoyAQvp2saBSnhjHs7E0FKrOvdzhIUkeBO4zIryt4y8c+Ju3FVfm9VZQIDAQAB",
  "e": "AQAB",
  "alg": "RS256",
  "kid": "w_sV_P0ZJujik6NvCKLEGE9NQ2tXe3kL9QfCQjTdIbI",
  "use": "sig"
}
```

Step 4: Add a Tool

STEP 4: ツールを作成する

⑪ 『Keyset url』テキスト入力欄に、STEP3補足でメモしたwell-known/jwks URLを入力します。

(例) : https://lti-ri.imsglobal.org/platforms/3793/platform_keys/3482.json

⑭ 『Oauth2 url』テキスト入力欄に、STEP3補足でメモしたOAuth2 Access Token URLを入力します。

(例) : https://lti-ri.imsglobal.org/platforms/3793/access_tokens

⑯ 『Platform oidc auth url』テキスト入力欄に、STEP3補足でメモしたOIDC Auth URLを入力します。

(例) : <https://lti-ri.imsglobal.org/platforms/3793/authorizations/new>

⑰ 『Create Tool』ボタンを選択し、Toolを作成します。

Step 4: Add a Tool

Name: DA_Tool_Test01

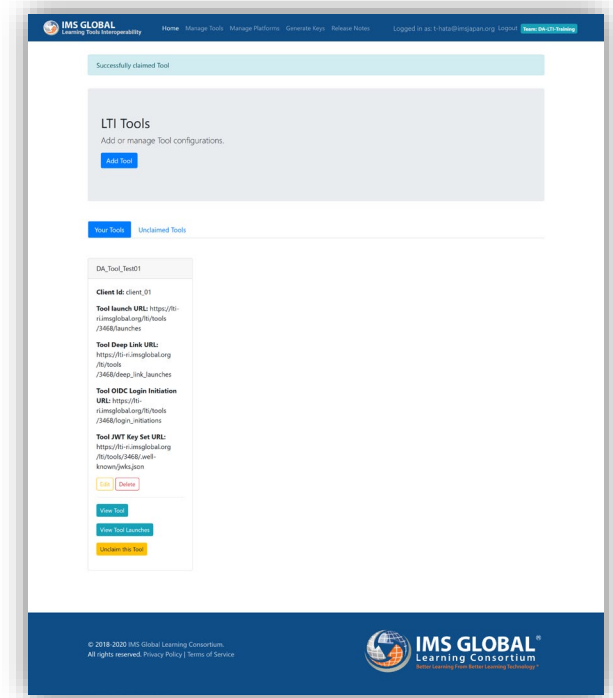
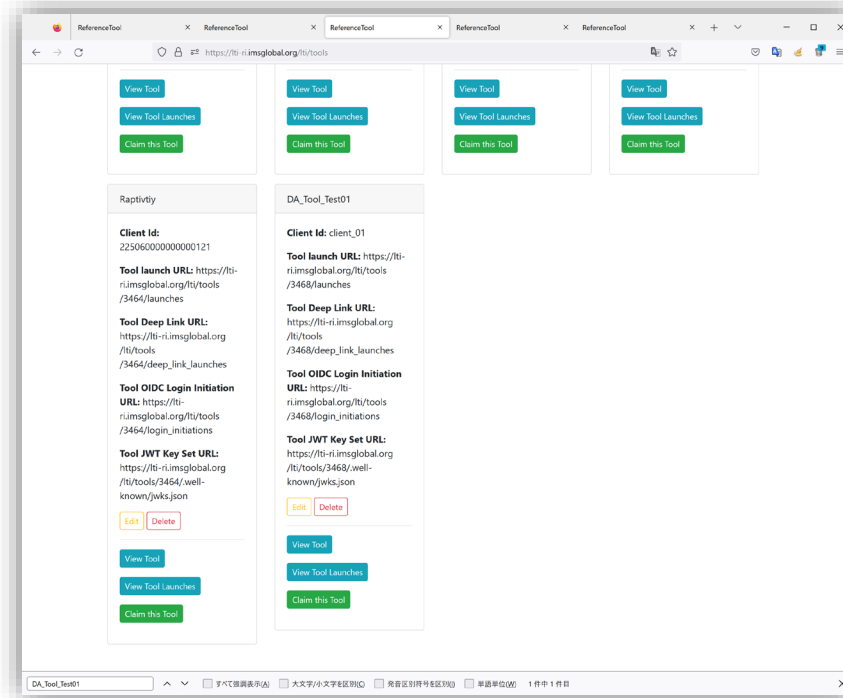
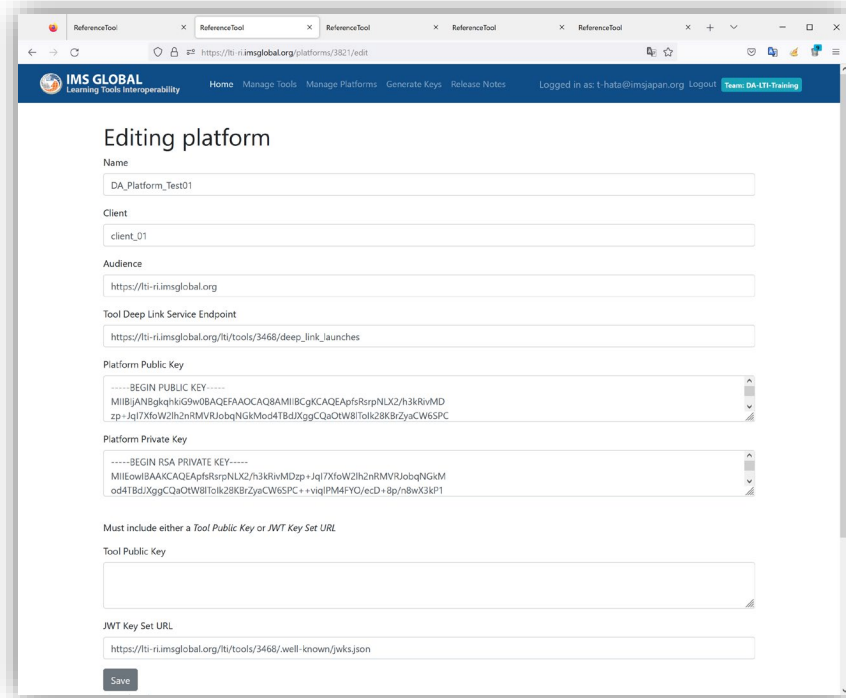
Client Id: client_01

Tool launch URL: <https://lti-ri.msglobal.org/lti/tools/3468/launches>

Tool Deep Link URL: https://lti-ri.msglobal.org/lti/tools/3468/deep_link_launches

Tool OIDC Login Initiation URL: https://lti-ri.msglobal.org/lti/tools/3468/login_initiations

Tool JWT Key Set URL: <https://lti-ri.msglobal.org/lti/tools/3468/.well-known/jwks.json>

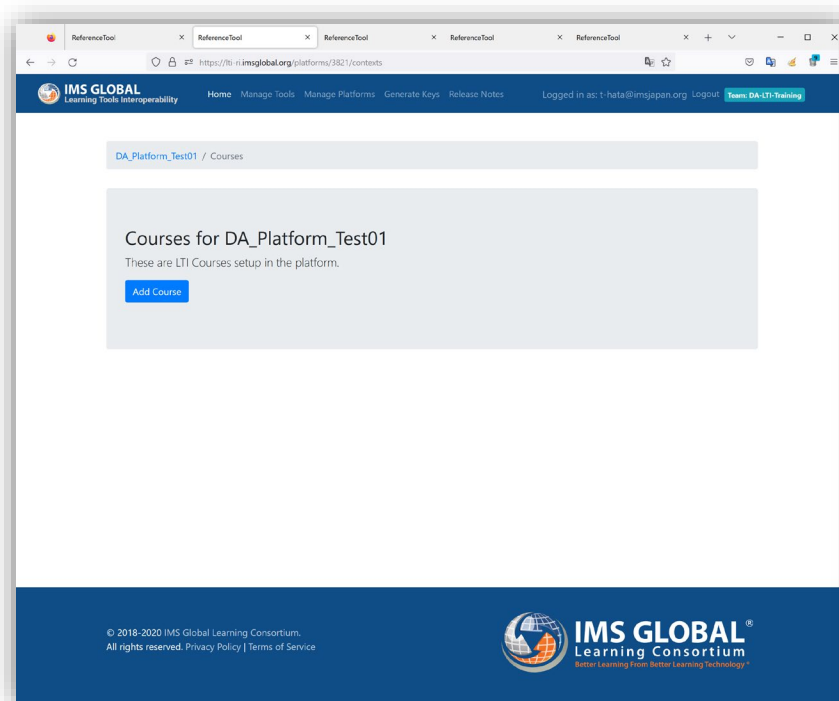


Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

- ① 先ほど作成したPlatformの詳細を表示します。
『Manage Platform』タブを選択し、作成した『Platform』カードを確認します。
『Platform』カードの『View Platform』ボタンを選択します。
- ① コンテキスト情報として、Course情報を設定し、追加します。
『Courses』アコーディオン・ボタンを選択します。
 - ② 『Add Course』ボタンを選択します。
- ③ Course情報を設定します。
『Label』テキスト入力欄に、適当なラベル名(例: COURSE001)を入力します。
『Title』テキスト入力欄に、適当なタイトル(例: COURSE_TITLE)を入力します。
『Type of context』テキスト入力欄に、適当な分類(例: TEST)を入力します。
- ④ 『Save』ボタンを選択します。

Step 5: In Platform tab, view your Platform




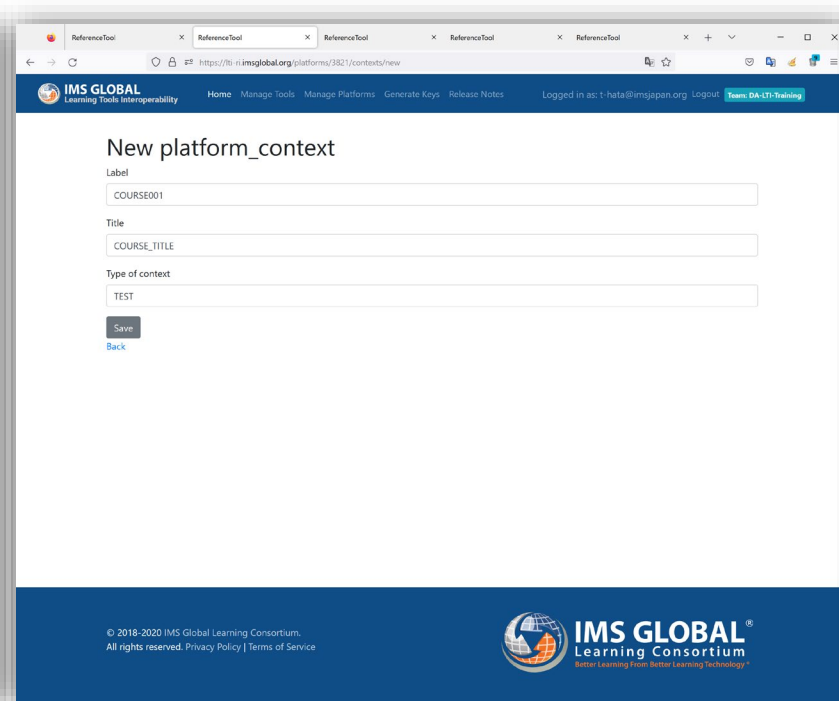
DA_Platform_Test01 / Courses

Courses for DA_Platform_Test01

These are LTI Courses setup in the platform.

[Add Course](#)

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New platform_context


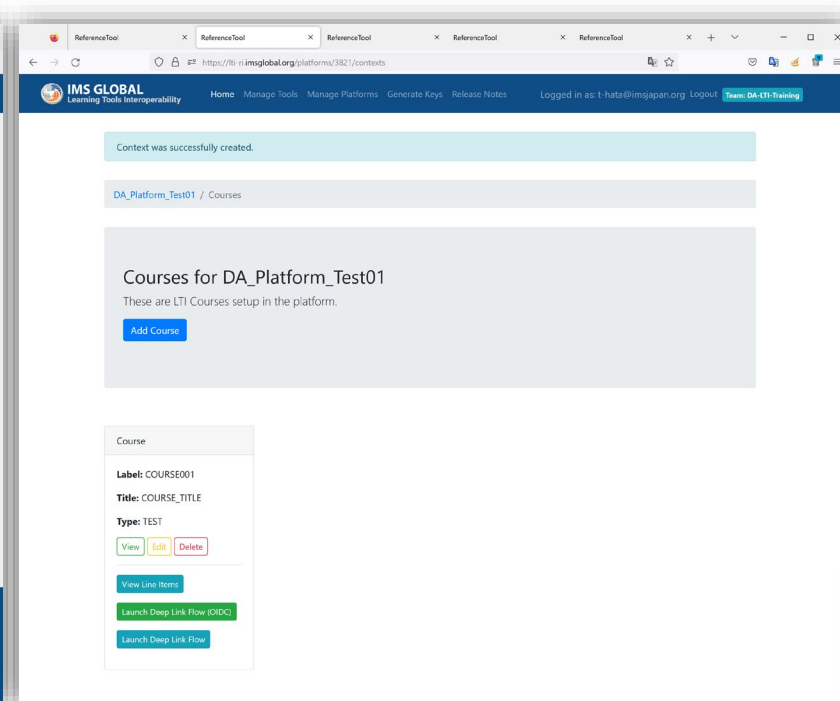
Label
COURSE001

Title
COURSE_TITLE

Type of context
TEST

[Save](#)
[Back](#)

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Context was successfully created.

DA_Platform_Test01 / Courses

Courses for DA_Platform_Test01

These are LTI Courses setup in the platform.

[Add Course](#)

Course

Label: COURSE001

Title: COURSE_TITLE

Type: TEST


[View](#) [Edit](#) [Delete](#)

[View LTI Items](#)

[Launch Deep Link Flow \(OIDC\)](#)

[Launch Deep Link Flow](#)

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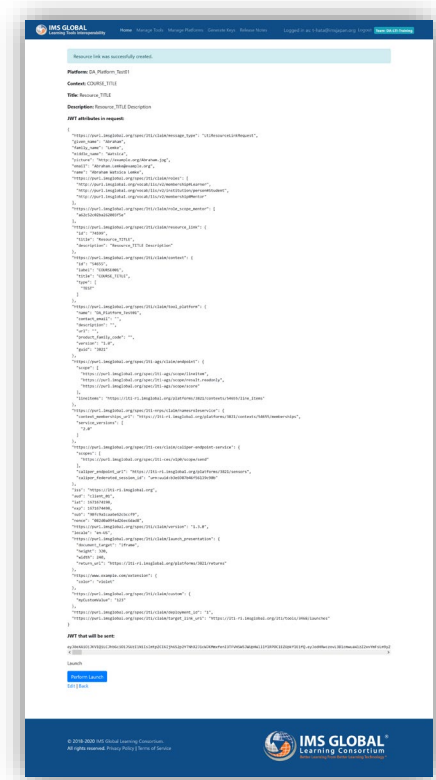
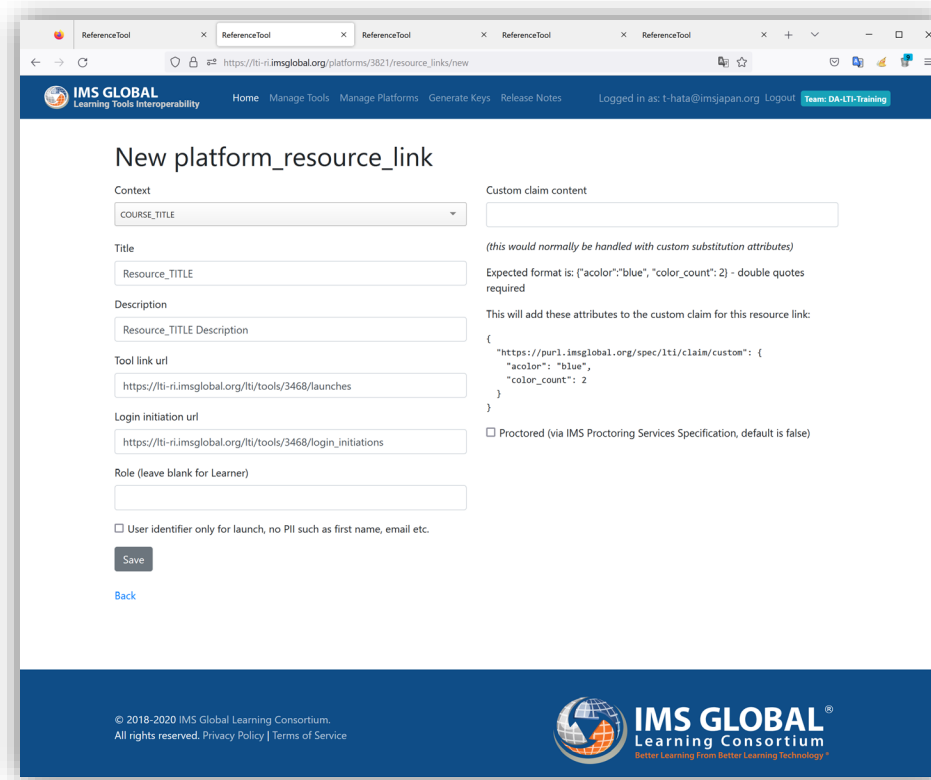
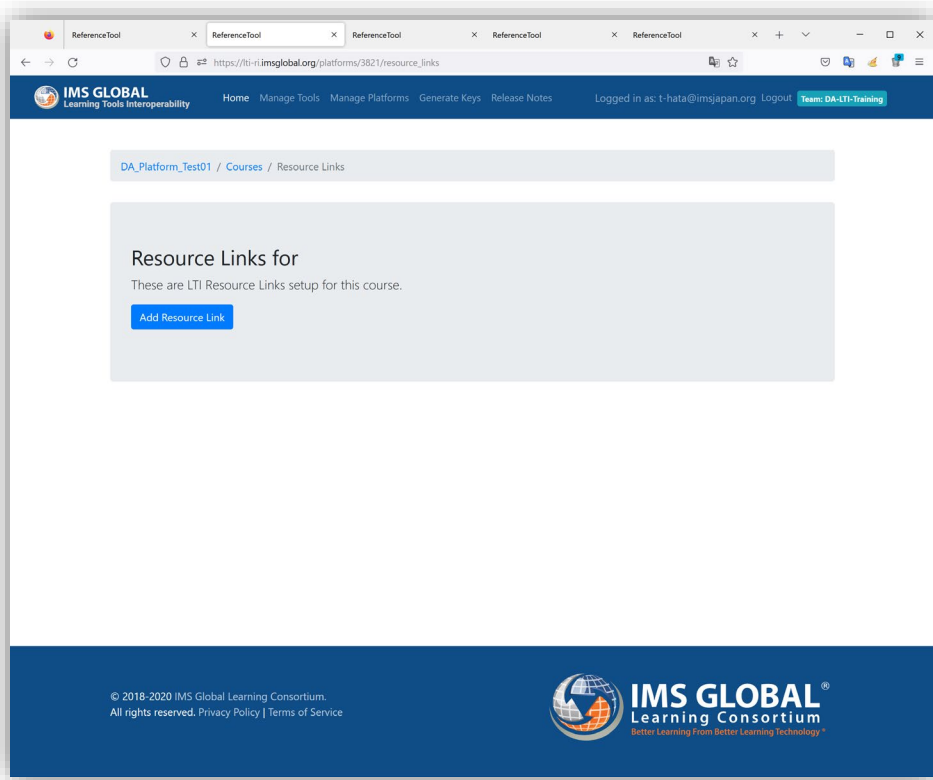


Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

- ⑤ Platform詳細表示画面に戻ります。
ヘッダ下のナビゲーション・リンクから『プラットフォーム名』ボタンを選択します。
- ⑥ リソースリンク情報を設定し、追加します。
『Resource Links』アコーディオン・ボタンを選択します。
『Add Resource Links』ボタンを選択します。
- ⑦ リソースリンク情報を設定します。
『Context』プルダウンメニューからコースタイトルを選択します。
『Title』テキスト入力欄に、適当なタイトル(例: Resource_TITLE)を入力します。
『Description』テキスト入力欄に、適当な説明を入力します。
- ⑧ 「Tool link url」情報をツール詳細の「Tool launch URL」からコピーして設定します。
- ⑨ 「Login initiation url」情報をツール詳細の「Tool OIDC Login Initiation URL」からコピーして設定します。
- ⑩ 『Save』ボタンを選択します。

Step 5: In Platform tab, view your Platform

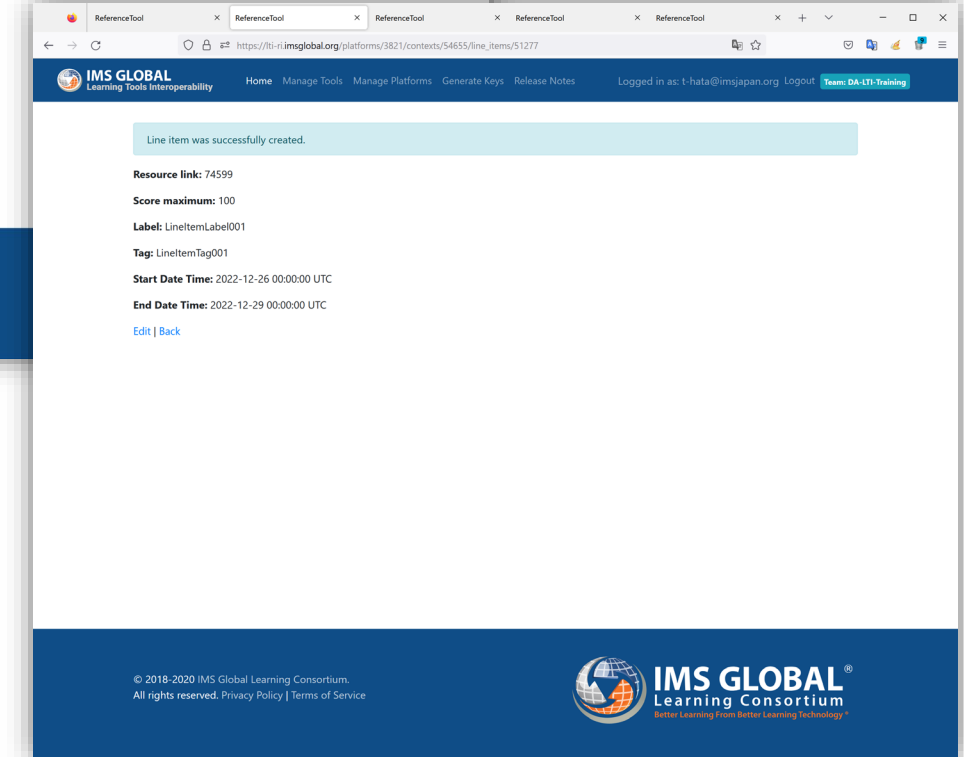
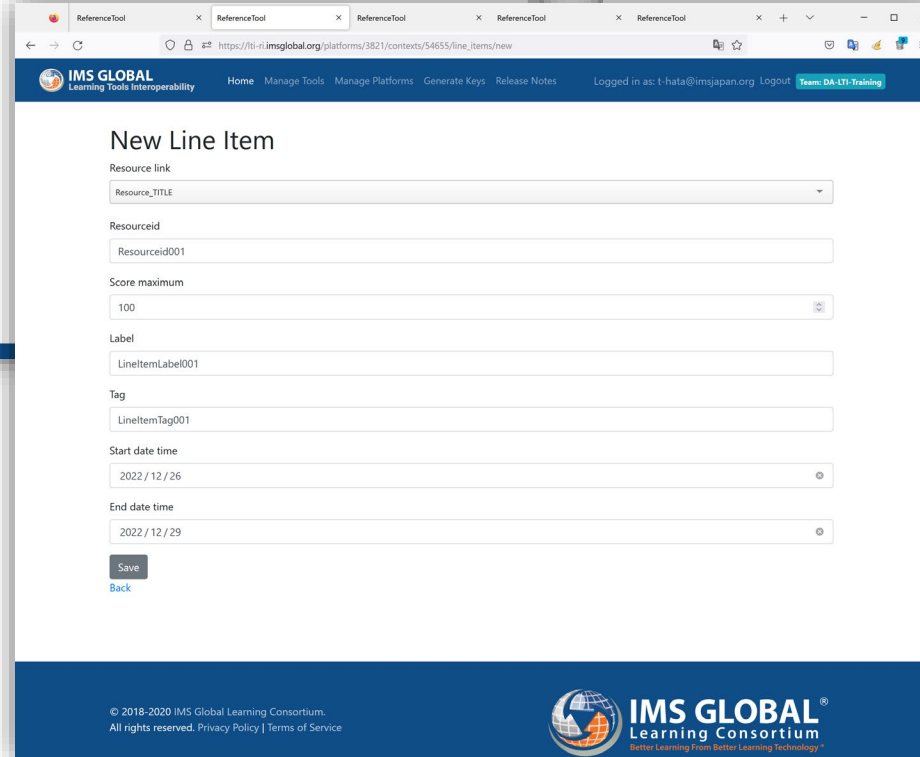
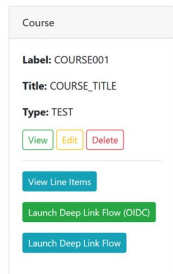
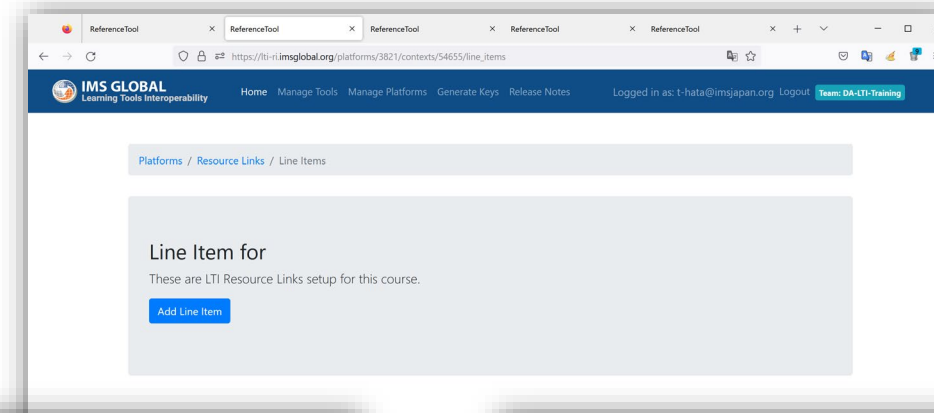
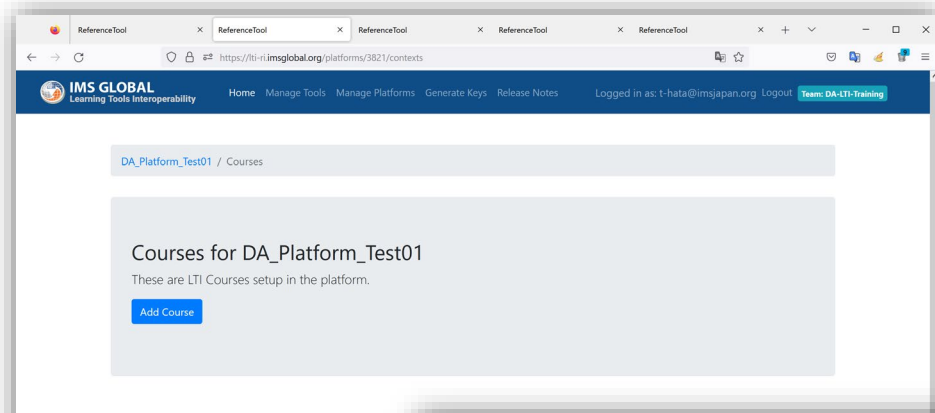


Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

- ⑪ Platform詳細表示画面に戻ります。
画面下の『Back』リンクを選択します。
ヘッダ下のナビゲーション・リンクから『プラットフォーム名』ボタンを選択します。
- ⑫ 『Courses』アコーディオン・ボタンを選択します。
- ⑬ ラインアイテム情報を設定します。
『View Line Items』ボタンを選択します。
- ⑭ 『Add Line Items』ボタンを選択します。

Step 5: In Platform tab, view your Platform



Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

⑮ ラインアイテム情報を設定します。

『Resource link』プルダウンメニューからリソースリンクを選択します。

『Resourceid』テキスト入力欄に、適当なID(例: Resourceid001)を入力します。

『Score maximum』テキスト入力欄に、最大スコア(満点)を入力します。

最大スコアは、null 以外の 0 より大きい数値

『Label』テキスト入力欄に、適当なラベル(例: LineItemLabel001)を入力します。

『Tag』テキスト入力欄に、適当なタグ(例: LineItemTag001)を入力します。

『Start date time』テキスト入力欄に、開始日をカレンダーから入力します。

『End date time』テキスト入力欄に、終了日をカレンダーから入力します。

⑯ 『Save』ボタンを選択します。

Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

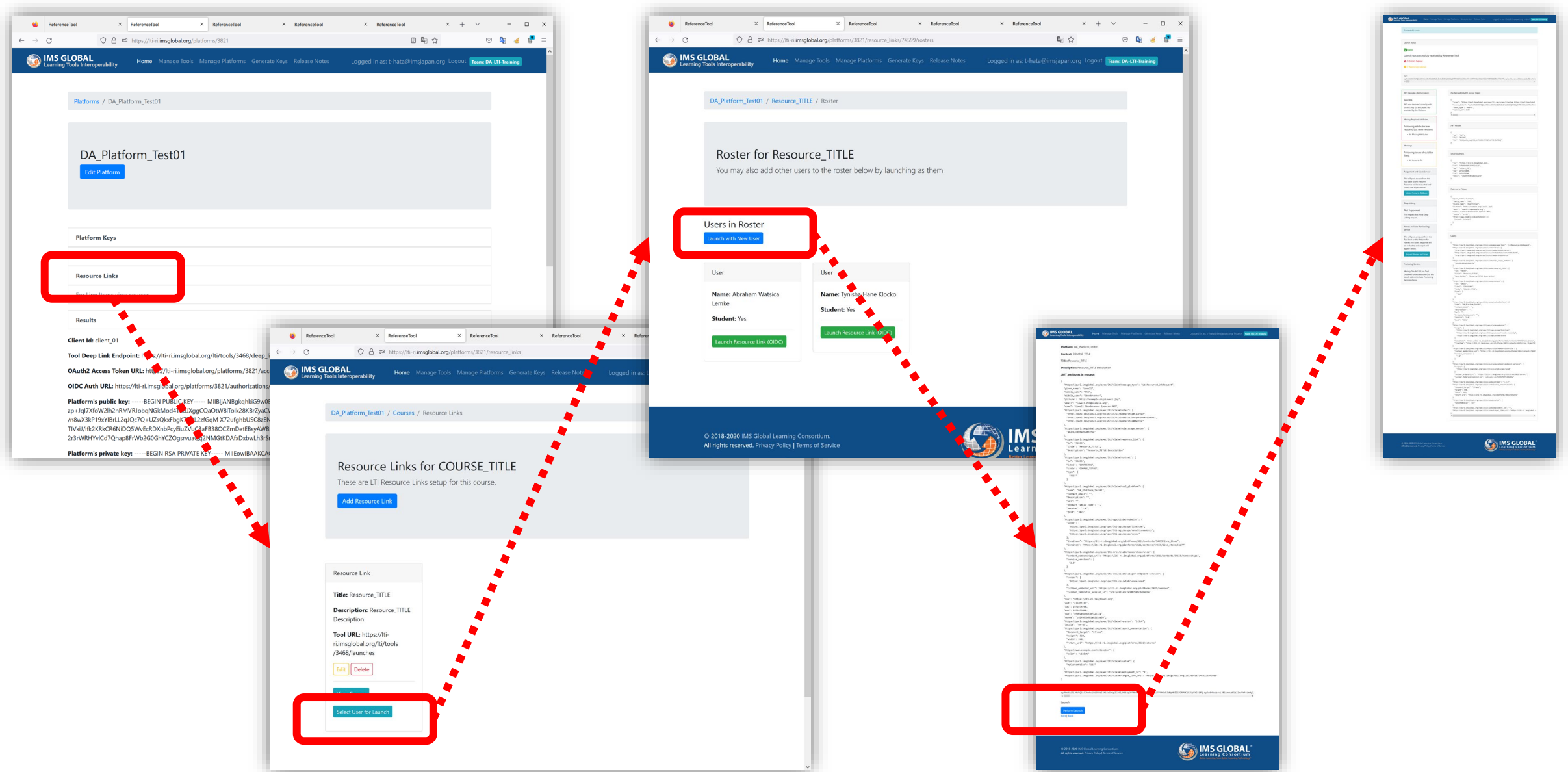
- ⑰ Platform情報を追加設定します。
Platform一覧画面に戻ります。
画面下の『Back』リンクを選択します。
ヘッダ下のナビゲーション・リンクから『Platforms』ボタンを選択します。
- ⑱ Platform詳細編集画面を表示します。
『Platform』カードの『Edit Platform』ボタンを選択します。
- ⑲ 下記の値を追加します。
「Tool Deep Link Service Endpoint」情報をツール詳細の「Tool Deep Link URL」からコピーして設定します。
「JWT Key Set URL」情報をツール詳細の「Tool JWT Key Set URL」からコピーして設定します。
『Save』ボタンを選択します。

Step 5: In Platform tab, view your Platform

STEP 5: 『プラットフォーム』タブで、プラットフォームを表示します

- ⑳ Platform詳細画面が表示されていることを確認します。
Platform一覧画面を表示します。
作成した『Platform』カードの『View Platform』ボタンを選択します。
- (21) リソースリンク情報を表示し、先ほど作成したリソースリンクを確認します。
『Resource Links』アコーディオン・ボタンを選択します。
- (22) 先ほど作成したリソースリンク情報カードの『Select User for Launch』ボタンを選択します。
- (23) 先ほど作成したリソースリンク情報カードの『Launch with New User』ボタンを選択します。
- (24) 先ほど作成したリソースリンク情報カードの『Perform Launch』ボタンを選択します。
- (25) 構成が正しく設定されている場合は、ページの上部に「Successful Launch」と表示されます。

新規ユーザ起動: New User Launch



ユーザ選択起動: User Launch

The process is as follows:

- Platform Configuration:** The user navigates to the platform configuration page for `DA_Platform_Test01`. The **Resource Links** section is highlighted.
- Add Resource Link:** The user clicks **Add Resource Link** to create a new resource link for the course.
- Roster Management:** The user views the **Roster for Resource_TITLE** and clicks **Launch Resource Link (2020)** to initiate the launch process.
- Tool Request:** The system initiates login from the tool, displaying **Initiating Login from Tool for Resource_TITLE**. The **Tool request** button is highlighted.
- Authentication Request:** The system sends an authentication request back to the platform, displaying **Make Authentication Request back to Platform DA_Tool_Test01**. The **Send POST request** button is highlighted.
- Validation:** The system performs authentication request validation from the tool, displaying **Authentication Request Validation from Tool**. The **Launch Resource Link** button is highlighted.

Conformance Test Tool

コンFORMANCE・テスト・ツール

1EDTECH LTI 1.3 実装支援ツール

Conformance Test Tool 起動手順 方法

Recoru		CLR Consumer CLR Provider CLR Editor		Recoru Certification Details
Common Cartridge	Specification	Valid Test Sets Common Cartridge Tools		Test Suite - Member Validator Common Cartridge Certification Process
Learning Information Systems	Specification	LIS Tools		Test Suite - Sync Agent Test Suite - Ref Agent LIS Certification Process
Learning Tools Interoperability	Specification	Reference Implementation	Assignment and Grades v2	Test Suite
Learning Tools Interoperability Proctoring Services	Specification			Test Suite
Learning Tools Interoperability Resource Search	Specification	LTI-RS Open Source Resources	Resource Search Manager	Test Suite - Service Providers Test Suite - Service Consumers
OneRoster	Specification	Data Files and CSV Test Sets		Test Suite - CSV Validator Test Suite - Data Providers Test Suite - Data Consumers OneRoster Certification Process
Open Badges	Specification	Reference Implementation	Badge Connect	Test Suite
Question and Test Interoperability	Specification	Valid Test Sets Sample Code		Test Suite - Member Validator QTI Certification Process

Welcome, t-hata@imsjapan.org | Membership | Events | News | Global | Specifications | My 1EdTech | Log out

Learning Tools Interoperability (LTI) Certification Suite

The goal of the LTI Certification Test Suite is to encourage interoperable implementations of both systems such as LMSs or portals (Platforms) and External Applications or Content (Tools).

LTI v1.3 and LTI Advantage Certification Test Suite

To achieve certification to the latest version of LTI v1.3 and the LTI Advantage extensions (Deep Linking v2.0, Assignment and Grade Services v2.0, and Names and Role Provisioning Services v2.0), visit the test suite here:
<https://ltiadvantagevalidator.msglobal.org/ltiadv/certification.html>

Legacy versions of LTI (v1.0, v1.1, v1.1.1, v1.2 and v2.0)

<https://www.msglobal.org/lti-security-announcement-center/lti-advantage-implementation-schedule> Please refer to the announcements for more details.

IMS GLOBAL LTI Advantage

Member User Setup

LTI Advantage Certification Suite - v 1.1.1f

Confirm your contact information below

Your Name:

Your Email:

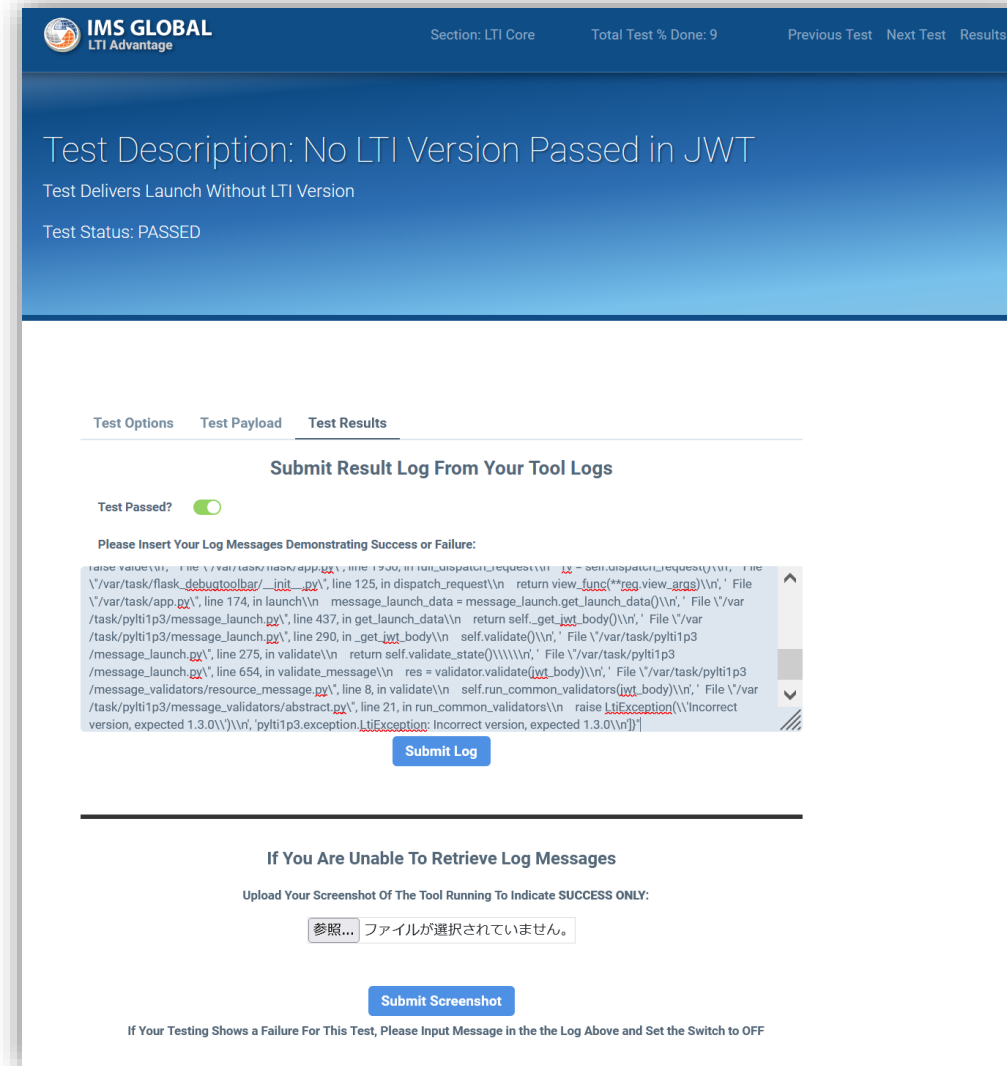
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<https://ltiadvantagevalidator.msglobal.org/ltiadv/index.html>

Conformance Test Results

<https://ltiadvantagevalidator.msglobal.org/ltiadv/certification.html>

- Tests for LTI v1.3 Core:
 - 30 Test Cases
- Tests for Deep Linking:
 - 8 Test Cases
- Tests for Names and Role Provisioning Services
 - 5 Test Cases
- Tests for Assignment and Grade Services



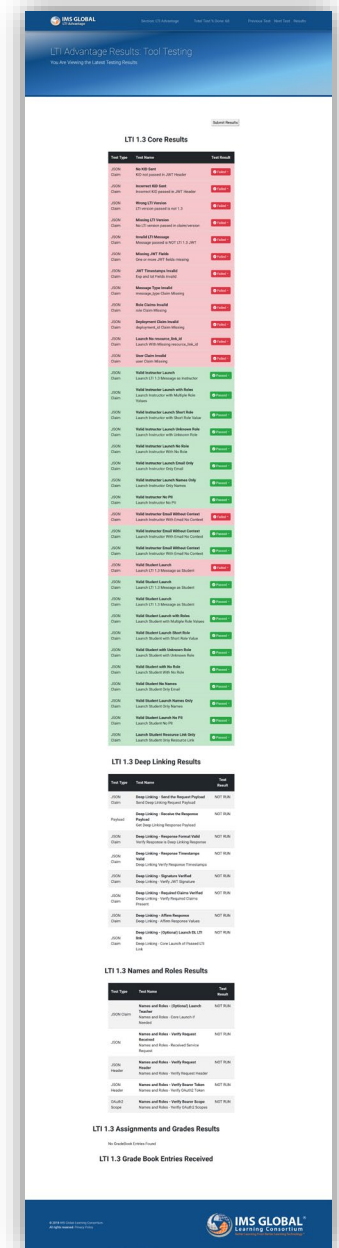
The screenshot shows the LTI Advantage Validator interface for a test titled "No LTI Version Passed in JWT". The test status is "PASSED". The interface includes a navigation bar with "Test Options", "Test Payload", and "Test Results". Below the navigation bar, there is a "Submit Result Log From Your Tool Logs" section with a "Test Passed?" toggle switch set to "ON". A code block contains the following log messages:

```

raise ValueError('File \var\task\taskapp.py', line 130, in run_dispatcher_request\n
File \var\task\task_debugtoolbar\__init__.py', line 125, in dispatch_request\n
return view_func(**req.view_args)\n
File \var\task\taskapp.py', line 174, in launch\n
message_launch_data = message_launch.get_launch_data()\n
File \var\task\pylti1p3\message_launch.py', line 437, in get_launch_data\n
return self.get_jwt_body()\n
File \var\task\pylti1p3\message_launch.py', line 290, in get_jwt_body\n
self.validate()\n
File \var\task\pylti1p3\message_launch.py', line 275, in validate\n
return self.validate_state()\n
File \var\task\pylti1p3\message_launch.py', line 654, in validate_message\n
res = validator.validate_jwt_body()\n
File \var\task\pylti1p3\message_validators\resource_message.py', line 8, in validate\n
self.run_common_validators(jwt_body)\n
File \var\task\pylti1p3\message_validators\abstract.py', line 21, in run_common_validators\n
raise LTIException('Incorrect version, expected 1.3.0\n', pylti1p3.exception.LTIException('Incorrect version, expected 1.3.0\n'))

```

Below the code block is a "Submit Log" button. Further down, there is a section titled "If You Are Unable To Retrieve Log Messages" with a "Submit Screenshot" button. At the bottom, a message states: "If Your Testing Shows a Failure For This Test, Please Input Message in the the Log Above and Set the Switch to OFF".



The screenshot shows the LTI Advantage Validator interface displaying a list of test results. The results are organized into several sections:

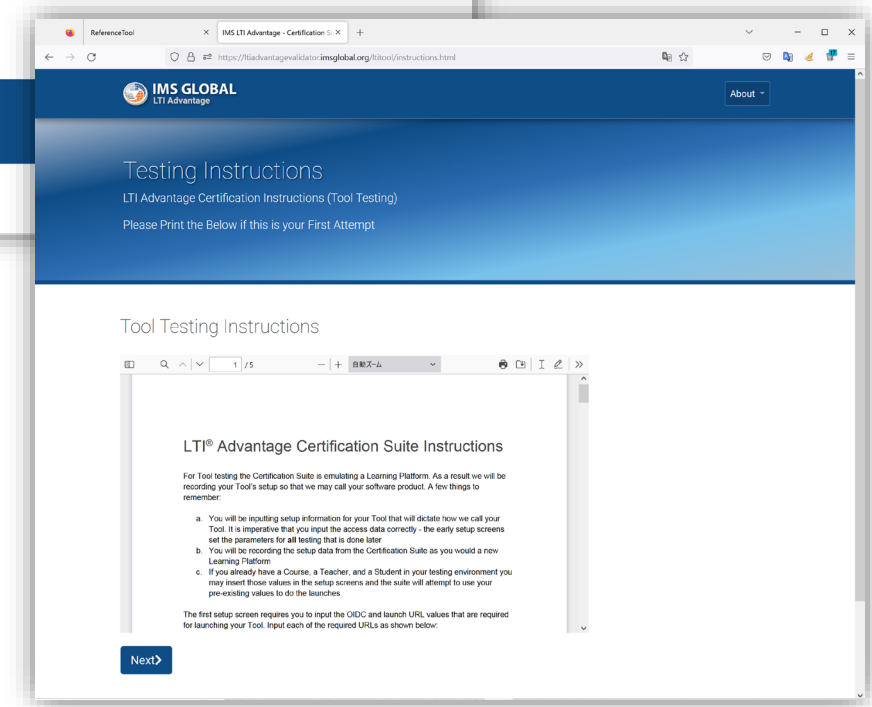
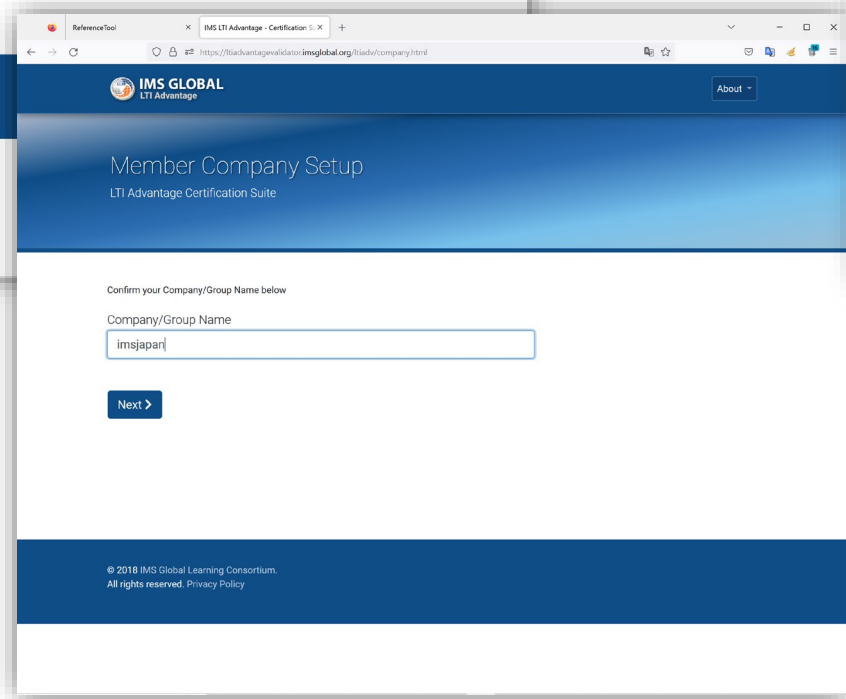
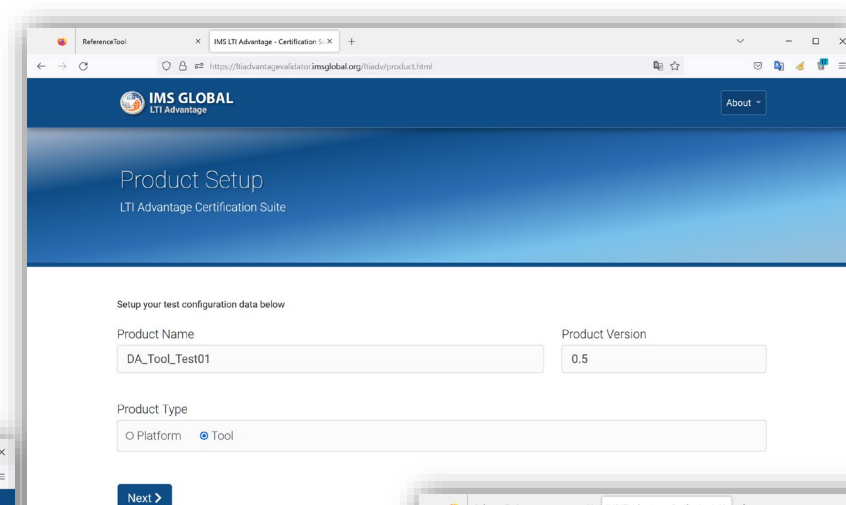
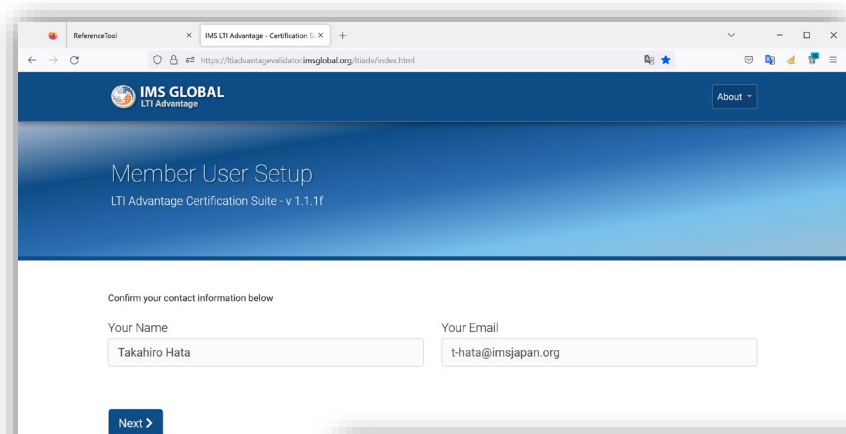
- LTI 1.3 Core Results:** A table with columns for Test Name, Test Status, and Test Result. It lists 30 test cases, all of which are marked as "PASSED".
- LTI 1.3 Deep Linking Results:** A table with columns for Test Name, Test Status, and Test Result. It lists 8 test cases, all of which are marked as "PASSED".
- LTI 1.3 Names and Roles Results:** A table with columns for Test Name, Test Status, and Test Result. It lists 5 test cases, all of which are marked as "PASSED".
- LTI 1.3 Assignments and Grades Results:** A section indicating that no test results were received for this category.

The interface also includes a navigation bar at the top and a footer with the IMS Global Learning Consortium logo.

LTI v1.3 Core Test Cases: 12 Error, 18 Success

#	Test Name	#	Test Name	#	Test Name
1	No KID Sent	11	Launch No resource_link_id	21	Valid Instructor Email Without Context
	KID not passed in JWT Header		Launch With Missing resource_link_id		Launch Instructor With Email No Context
2	Incorrect KID Sent	12	User Claim Invalid	22	Valid Student Launch
	Incorrect KID passed in JWT Header		user Claim Missing		Launch LTI 1.3 Message as Student
3	Wrong LTI Version	13	Valid Instructor Launch	23	Valid Student Launch with Roles
	LTI version passed is not 1.3		Launch LTI 1.3 Message as Instructor		Launch Student with Multiple Role Values
4	Missing LTI Version	14	Valid Instructor Launch with Roles	24	Valid Student Launch Short Role
	No LTI version passed in claim/version		Launch Instructor with Multiple Role Values		Launch Student with Short Role Value
5	Invalid LTI Message	15	Valid Instructor Launch Short Role	25	Valid Student with Unknown Role
	Message passed is NOT LTI 1.3 JWT		Launch Instructor with Short Role Value		Launch Student with Unknown Role
6	Missing JWT Fields	16	Valid Instructor Launch Unknown Role	26	Valid Student with No Role
	One or more JWT fields missing		Launch Instructor with Unknown Role		Launch Student With No Role
7	JWT Timestamps Invalid	17	Valid Instructor Launch No Role	27	Valid Student No Names
	Exp and lat Fields invalid		Launch Instructor With No Role		Launch Student Only Email
8	Message Type Invalid	18	Valid Instructor Launch Email Only	28	Valid Student Launch Names Only
	message_type Claim Missing		Launch Instructor Only Email		Launch Student Only Names
9	Role Claims Invalid	19	Valid Instructor Launch Names Only	29	Valid Student Launch No PII
	role Claim Missing		Launch Instructor Only Names		Launch Student No PII
10	Deployment Claim Invalid	20	Valid Instructor No PII	30	Launch Student Resource Link Only
	deployment_id Claim Missing		Launch Instructor No PII		Launch Student Only Resource Link

Conformance Test Tool 1/3



Conformance Test Tool 2/3

IMS GLOBAL
LTI Advantage

About

Test Configuration

LTI Advantage Certification Suite (Tool Testing)
Please Insert URLs Below for your Tool Setup

Your Tool Configuration

Tool End-Point to Receive Launches
(Note: this is the target_link_url that the cert suite will send in OIDC initiation.)

OIDC Login Initiation URL
(Note: this is your tool's OIDC initiation URL.)

Tool OIDC Launch Redirect URL
(Note: this should be the REGISTERED URL for your Tool. The cert suite POSTs launches here)

Tool End-Point to Receive Deep Link Launches
(Note: this is the target_link_url that the cert suite will send in OIDC initiation for Deep Linking.)

Tool OIDC Redirect Deep Linking URL
(Note: this is the REGISTERED URL in OIDC for your Tool's Deep Linking. The cert suite POSTs launches here)

Start Testing With:
(Note: You Should Know What You Are Doing to Skip Core Testing)
 Deep Linking Linking UI Flow
 Names and Roles Service
 Assignments and Grades Service

[Next >](#)

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IMS GLOBAL
LTI Advantage

About

Cert Suite (Platform) Configuration - PART I

LTI Advantage Certification Suite (Tool Testing)
Please Record the General Details of Platform Settings for Certification Suite

Certification Configuration Details

Testing Iss Value
(Note: the cert suite will send this value in the OIDC initialization)

OIDC Auth URL
(Note: this is the URL value for your Tool's OIDC auth call)

Platform Well-Known/JWKS URL

OAuth2 Access Token URL

[Next >](#)

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About

Cert Suite Platform Configuration (PART II)

LTI Advantage Certification Suite (Tool Testing)
Please Choose the Details of the Testing Setup - Platform Test Emulation

Platform Configuration Details

Your Client Id (Record this Value!)

Service Key Setup:
(Note: You MUST Choose ONE of the options below!)

We Require a Private Key From the Platform

We Deploy a Tool JWKS

We Provide a PEM Public Key To Platforms

Enter your Tool's JWKS Server:
(This must provide RS256 JWK values for the provided KID)

[Next >](#)

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ReferenceTool x IMS LTI Advantage - Certification S... x

https://ltiadvantagevalidator.imsglobal.org/ltitool/toolsetupvalues3.html

IMS GLOBAL
LTI Advantage

About

Platform Configuration (PART III)

LTI Advantage Certification Suite (Tool Testing)
Please Record the DeploymentId for this Cert Suite Testing

Platform Configuration Details

Please Record the Deployment ID

We are *only* modeling a single-tenant deployment model. The Cert Suite has Provisioned the deployment for this client_id. Record the Deployment ID below.
 Deployment Id (Provisioned for Tool Testing)

[Next >](#)

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Conformance Test Tool 3/3

IMS GLOBAL
LTI Advantage

Testing Values Setup
Please Insert Your Testing Values for Learner, Instructor, and Context

User Setup

Input Teacher Details	Input Student Details
Teacher id (LIS guid): <input type="text" value="39890"/>	Student id (LIS guid): <input type="text" value="40899"/>
Teacher First Name: <input type="text" value="Lauren"/>	Student First Name: <input type="text" value="Carrie"/>
Teacher Middle Name: <input type="text" value="Colleen"/>	Student Middle Name: <input type="text" value="test"/>
Teacher Last Name: <input type="text" value="Hutton"/>	Student Last Name: <input type="text" value="Lowell"/>
Teacher Email: <input type="text" value="l.c.hutton@district1.com"/>	Student Email: <input type="text" value="c.lowell@district1.com"/>

Course Setup

Course Title:

Course Label:

Course Id:

Course Type:

(Optional) Resource Id:

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IMS GLOBAL
LTI Advantage

Custom Tool Variables Configuration
LTI Advantage Certification Suite (Tool Testing)
Please Insert Required Custom Values For Your Tool

Your Tool Configuration

Custom Variable Name 1	Custom Variable Value 1
<input type="text"/>	<input type="text"/>
Custom Variable Name 2	Custom Variable Value 2
<input type="text"/>	<input type="text"/>
Custom Variable Name 3	Custom Variable Value 3
<input type="text"/>	<input type="text"/>
Custom Variable Name 4	Custom Variable Value 4
<input type="text"/>	<input type="text"/>
Custom Variable Name 5	Custom Variable Value 5
<input type="text"/>	<input type="text"/>

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ReferenceTool x IMS LTI Advantage - Certification S... x

https://ltiadvantagevalidator.imsglobal.org/ftool/no-back

IMS GLOBAL
LTI Advantage

Section: LTI Core Total Test % Done: 0 Previous Test Next Test Results

Test Description: KID not passed in JWT Header
Test Verifies KID Required in Header
Test Status: NOT RUN

Test Options Test Payload Test Results

Choose User for Test

Student

IMS GLOBAL LTI Advantage Certification Suite (Tool Testing)

LTI 1.0 Core Results

Section	Test Name	Result
LTI 1.0 Core Results	Test 1	Pass
LTI 1.0 Core Results	Test 2	Pass
LTI 1.0 Core Results	Test 3	Pass
LTI 1.0 Core Results	Test 4	Pass
LTI 1.0 Core Results	Test 5	Pass
LTI 1.0 Core Results	Test 6	Pass
LTI 1.0 Core Results	Test 7	Pass
LTI 1.0 Core Results	Test 8	Pass
LTI 1.0 Core Results	Test 9	Pass
LTI 1.0 Core Results	Test 10	Pass
LTI 1.0 Core Results	Test 11	Pass
LTI 1.0 Core Results	Test 12	Pass
LTI 1.0 Core Results	Test 13	Pass
LTI 1.0 Core Results	Test 14	Pass
LTI 1.0 Core Results	Test 15	Pass
LTI 1.0 Core Results	Test 16	Pass
LTI 1.0 Core Results	Test 17	Pass
LTI 1.0 Core Results	Test 18	Pass
LTI 1.0 Core Results	Test 19	Pass
LTI 1.0 Core Results	Test 20	Pass
LTI 1.0 Core Results	Test 21	Pass
LTI 1.0 Core Results	Test 22	Pass
LTI 1.0 Core Results	Test 23	Pass
LTI 1.0 Core Results	Test 24	Pass
LTI 1.0 Core Results	Test 25	Pass
LTI 1.0 Core Results	Test 26	Pass
LTI 1.0 Core Results	Test 27	Pass
LTI 1.0 Core Results	Test 28	Pass
LTI 1.0 Core Results	Test 29	Pass
LTI 1.0 Core Results	Test 30	Pass
LTI 1.0 Core Results	Test 31	Pass
LTI 1.0 Core Results	Test 32	Pass
LTI 1.0 Core Results	Test 33	Pass
LTI 1.0 Core Results	Test 34	Pass
LTI 1.0 Core Results	Test 35	Pass
LTI 1.0 Core Results	Test 36	Pass
LTI 1.0 Core Results	Test 37	Pass
LTI 1.0 Core Results	Test 38	Pass
LTI 1.0 Core Results	Test 39	Pass
LTI 1.0 Core Results	Test 40	Pass
LTI 1.0 Core Results	Test 41	Pass
LTI 1.0 Core Results	Test 42	Pass
LTI 1.0 Core Results	Test 43	Pass
LTI 1.0 Core Results	Test 44	Pass
LTI 1.0 Core Results	Test 45	Pass
LTI 1.0 Core Results	Test 46	Pass
LTI 1.0 Core Results	Test 47	Pass
LTI 1.0 Core Results	Test 48	Pass
LTI 1.0 Core Results	Test 49	Pass
LTI 1.0 Core Results	Test 50	Pass
LTI 1.0 Core Results	Test 51	Pass
LTI 1.0 Core Results	Test 52	Pass
LTI 1.0 Core Results	Test 53	Pass
LTI 1.0 Core Results	Test 54	Pass
LTI 1.0 Core Results	Test 55	Pass
LTI 1.0 Core Results	Test 56	Pass
LTI 1.0 Core Results	Test 57	Pass
LTI 1.0 Core Results	Test 58	Pass
LTI 1.0 Core Results	Test 59	Pass
LTI 1.0 Core Results	Test 60	Pass
LTI 1.0 Core Results	Test 61	Pass
LTI 1.0 Core Results	Test 62	Pass
LTI 1.0 Core Results	Test 63	Pass
LTI 1.0 Core Results	Test 64	Pass
LTI 1.0 Core Results	Test 65	Pass
LTI 1.0 Core Results	Test 66	Pass
LTI 1.0 Core Results	Test 67	Pass
LTI 1.0 Core Results	Test 68	Pass
LTI 1.0 Core Results	Test 69	Pass
LTI 1.0 Core Results	Test 70	Pass
LTI 1.0 Core Results	Test 71	Pass
LTI 1.0 Core Results	Test 72	Pass
LTI 1.0 Core Results	Test 73	Pass
LTI 1.0 Core Results	Test 74	Pass
LTI 1.0 Core Results	Test 75	Pass
LTI 1.0 Core Results	Test 76	Pass
LTI 1.0 Core Results	Test 77	Pass
LTI 1.0 Core Results	Test 78	Pass
LTI 1.0 Core Results	Test 79	Pass
LTI 1.0 Core Results	Test 80	Pass
LTI 1.0 Core Results	Test 81	Pass
LTI 1.0 Core Results	Test 82	Pass
LTI 1.0 Core Results	Test 83	Pass
LTI 1.0 Core Results	Test 84	Pass
LTI 1.0 Core Results	Test 85	Pass
LTI 1.0 Core Results	Test 86	Pass
LTI 1.0 Core Results	Test 87	Pass
LTI 1.0 Core Results	Test 88	Pass
LTI 1.0 Core Results	Test 89	Pass
LTI 1.0 Core Results	Test 90	Pass
LTI 1.0 Core Results	Test 91	Pass
LTI 1.0 Core Results	Test 92	Pass
LTI 1.0 Core Results	Test 93	Pass
LTI 1.0 Core Results	Test 94	Pass
LTI 1.0 Core Results	Test 95	Pass
LTI 1.0 Core Results	Test 96	Pass
LTI 1.0 Core Results	Test 97	Pass
LTI 1.0 Core Results	Test 98	Pass
LTI 1.0 Core Results	Test 99	Pass
LTI 1.0 Core Results	Test 100	Pass

LTI 1.0 Deep Linking Results

LTI 1.0 Names and Roles Results

LTI 1.0 Assignments and Grades Results

LTI 1.0 Grade Book Entries Results