Tin Can

HELP DOCUMENT

Contents

Tin Can FAQs

I. What is Tin Can API?

As per ADL and Rustici, the Tin Can API is a learning technology that helps to capture the activities that happen as part of learning experiences. Using Tin Can, a wide range of systems can securely communicate with a simple vocabulary that captures the stream of activities. Tin Can specifications are generated by ADL and Rustici helps in its implementation. Tin Can uses REST based web service and JSON data to communicate with LRS.

II. How does the Tin Can API work?

"Recording of learners' actions happens whenever any activity takes place. The activity could be as simple as using an interaction or using, using an element of the interaction or completing one.

Every activity in Tin Can is tracked and published in the form of an 'Actor', a 'Verb' or an 'Object'. Let's analyze a sample Raptivity output for more clarity. Take this statement for example, 'John Swindall experienced 'Define Professions'. In this example 'John Swindall' is the actor, 'experienced' is the verb and 'Define Professions' is the Object.

When an activity needs to be recorded, the application sends secure statements in the form of "Actor, Verb, and Object" or for example 'John Swindall attempted 'Stage 1' to a Learning Record Store (LRS.) Learning Record stores a record all of the statements made and publishes it whenever user demands for it."

III. What are 'actor', 'verb' and 'Object'?

Actor: Actor refers to the learner who is performing an activity.
Verb: A verb defines the action happening between actors and activities. It could be as simple as experienced, attempted, completed, answered, passed, failed, etc.
Object: An object is the interaction itself or an element of the interaction on which the action is being performed.

IV. When to publish with Tin Can?

You should publish with Tin Can only when detailed tracking is required at each activity level.

V. Why am I getting errors as "Incorrect package" / "Missing imsmanifest xml or AICC structure"?

This error appears when your Learning Management Systems (LMS) does not support Tin Can. Tin Can tracking is possible with only few LMSes. User will need to check with his/her LMS provider for Tin Can feature availability.

VI. What is the difference between SCORM and Tin Can? What are the benefits of using Tin Can over SCORM?

Below is a self explanatory table which showcases differences between SCORM and Tin Can. The differences are sufficient in themselves to know why it is beneficial for Course Creators to use Tin Can.

Point of difference	SCORM	Tin Can
Browser dependency	SCORM needs a browser to track any data. It will not able to track activities in native mobile applications or drivers, etc.	Tin Can is not dependent on any browser since every communication happens through APIs and client server communication methodology. It can be used in any application/script etc.
Portability	SCORM data can be tracked only via a Learning Management System (LMS) and is non portable.	Tin Can Statements are sent to and stored in a Learning Record Store (LRS). The LRS is not just designed to store these statements, but is also capable of distributing them to other systems that have support for the Tin Can API such as LRS, LMS and other management systems
Scope of Tracking	SCORM can only track a limited number of things, i.e. completion/incompletion of an activity, total time spent in course, The pass or fail status and a single score. This means there is no way for SCORM to track anything beyond the above mentioned details.	In Tin Can a person can track 'n' numbers of events. 'Verbs' can be defined by LRS creator and added. It gives complete flexibility to the course creators to track whatever data they wish to track.
Tracking Informal Learning	SCORM cannot track anything apart from the pre-defined parameters, thus making it impossible to track informal learning.	The Tin Can API allows the course creators to record any learning experience, including informal learning and gives them a much richer picture of an individual's learning path. This can also help the course creator to derive any logical inferences from the tracked data.
Multi Learner Tracking	LMS is able to track details only for single learner.	LRS is a record store and can track details for the entire team, thus making team based learning much easier.

VII. Which version of Raptivity supports Tin Can?

Currently, Raptivity v 7.4 supports Tin Can v 0.95 for its Essential pack.

VIII. How would Raptivity users benefit from Tin Can tracking?

Raptivity users can track every activity as part of a learning process and can derive some significant inferences from the same using Tin Can support. For example, when a course creator adds a video in interactivity, it is expected that learner visits that video as a part of the course. Traditional tracking methodologies could not track whether the user visited the video or not. Or whenever a learner left an exercise midway or gave up, it was difficult to track the progress using traditional tracking methodologies. With the help of Tin Can support, course creators can track all these scenarios with the exact status using the Tin Can support for Raptivity.

IX. How to publish a Raptivity interaction with Tin Can tracking?

    a. Customize an interactivity from the Essential pack and Save it.
    b. Click on 'Publish' button on the menu bar
    c. Select preferred output type (Select HTML5 output if you want the output on mobile)
    d. Check the "Publish with tracking" checkbox
    e. Select "Publish With Tin Can 0.95" option from the options below
    f. Click on "Publish" button. It will create a package with the name "Tincan_Publish" in "Publish" folder of saved location

X. How do I test/check my Tin Can output?

Rustici Software has provided a way to check TinCan output. They have added TinCan support in their existing SCORM cloud. The cloud can be accessed at the URL: https://cloud.scorm.com.
Once you login to the SCORM cloud, use the following steps:
- Create an account with required information and preferred account type on https://cloud.scorm.com/sc/guest/SignUpForm. It will create an account and login to portal.
- Look for the "Choose File" button in the "Add Content" section on the right side of the SCORM Cloud homepage.
- Locate your interactivity; it should be a .ZIP file.
- Select your interactivity and it will upload to SCORM Cloud. If your interactivity has errors, it might not upload correctly. It will give warning at the bottom of screen.
- Click on the "Library" button on the left hand navigation panel of the SCORM Cloud
- Click on the name of the interactivity that you just uploaded.
- Click on the "Launch" button for your interactivity.
- Your interactivity should launch. If it doesn't, then there are errors inside your interactivity.
- Once the interactivity launches, use it. After that close the interactivity window.
- On main screen on cloud.scorm, you will get a link for "Return to LMS"

- Once back to LMS, click on the link "View Registration Statement History"
- You will get a list of tracking statements generated though interactivity

There are few more options available where events can be tracked using verbs.

XI. What kinds of verbs are supported in Raptivity and on which events?

Below is a table which shows a list of verbs which are displayed when the corresponding events listed in the table take place. Also mentioned are some example statements for every combination of event and verb.

Sr. No.	Verb	Event	Example
1.	Experienced	• Interaction loads	• Situation: When the "Picture Show" interaction loads Statement: "John Swindall **experienced** 'History - The Tutankhamen Collection'"
		• Video loads	• Situation: When a video gets loaded in an interaction Statement: "John Swindall **experienced** 'Global Warming hazards'"
2.	Completed	• Interaction Completed	• Situation: When in the 'Picture Show' interaction, all images have been viewed Statement – "John Swindall **completed** 'Images Seen: 6"
3.	Passed	• Attempted questions in the interaction and completed them successfully	• Situation: When some questions have been attempted In the interaction, "In-Page test" titled "Test on AJAX", by John Swindall and he passes in the test. Statement – "John Swindall **passed** 'Text on AJAX' with score 6"
4.	Failed	• Attempted questions in an interaction and failed	• Situation: When some questions have been attempted in the interaction, "In-Page test" titled "Test on AJAX", by John Swindall and he fails in the test. Statement – "John Swindall **passed** 'Text on AJAX' with score 2"

XII. Some Raptivity interactions with sample Tin Can output

Interaction Model	Tin Can Output
Flip the Book	2013-03-05T05:23:09.921 **John Swindall experienced 'Flip The Book'** 2013-03-05T05:23:09.929 **John Swindall experienced Video 'Significant Impact of Global Warming'** 2013-03-05T05:23:09.999 **John Swindall completed 'Flip The Book'**

Classification Exercise	2013-03-05T05:33:09.924 **John Swindall experienced 'Famous Authors from Around the World'**
	 2013-03-05T05:33:45.503 **John Swindall failed 'Famous Authors from Around the World' with score 0**
	
	 Detailed Snippets:
	
	 2013-03-05T05:33:09.924 ***John Swindall experienced 'Famous Authors from Around the World'***
	
	 {
	 …
	     "id": "http://www.scorm.com/ClassificationExersice1",
	     "definition": {
	       "name": {
	         "en-US": ***"Famous Authors from Around the World"***
	       },
	       "description": {
	         "en-US": " "
	       }
	     },
	     "objectType": "Activity"
	
	 2013-03-05T05:33:45.503 ***John Swindall failed 'Famous Authors from Around the World' with score 0***
	
	 {
	 …
	     "id": "http://www.scorm.com/ClassificationExersice2",
	     "definition": {
	       "name": {
	         "en-US": ***"Famous Authors from Around the World"***
	       },
	       "description": {
	         "en-US": ***"Total correctly placed answers are : 1***

	Those are : Youth" } }, "objectType": "Activity" } } }	
Create a Tree	2013-03-05T05:40:11.688	**John Swindall experienced 'Define Professions'**
	2013-03-05T05:41:24.273	**John Swindall passed 'Define Professions' with score 50**
	Detailed Snippets:	

	2013-03-05T05:40:11.688	*John Swindall experienced 'Define Professions'*
		 {
		    …
		            "parent": {
		                "id": "http://www.scorm.com/CreateATree1",
		                "definition": {
		                    "name": {
		                        "en-US": "**Define Professions**"
		                    }

	2013-03-05T05:41:24.273	*John Swindall passed 'Define Professions' with score 50*
		 {
		    …
		                "en-US": **"Total correctly placed answers are: 5.**
		Those are: Landscape Architecture, Human Resources, Game Design, Public Relations, Photojournalism."
		                }
		            },
		            "objectType": "Activity"
		        }
		    }

Survey Slider	2013-03-05T05:45:12.590	**John Swindall experienced 'Electronic Retailing Survey'**
	2013-03-05T05:45:52.315	**John Swindall completed 'Electronic Retailing Survey'**
	Detailed Snippets:	

	2013-03-05T05:45:12.590	*John Swindall experienced 'Electronic Retailing Survey'*
		
		 {
		    "id": "c145c73b-177e-442a-8af6-c24634bf0289",
		    "actor": {
		      "***name": "John Swindall***",
		      "account": {
		        "homePage": "http://cloud.scorm.com/",
		        "name": "KMZXJDSLQS|***johnt@harbingergroup.com***"
		      },
		      "objectType": "Agent"
		
		 …
		
		        "parent": {
		          "id": "http://www.scorm.com/SurveySlider1",
		          "definition": {
		            "name": {
		              "en-US": "***Electronic Retailing Survey***"
		            }
		          }

	2013-03-05T05:45:52.315	*John Swindall completed 'Electronic Retailing Survey'*
		
		 {
		
		    …
		    "result": {
		      "success": true,
		      "completion": true
		    },
		    …
		          "description": {
		            "en-US": "***1. Total sales : 44%***
		 2. Growth in sales : 28%
		 3. Market share : 18%
		 "
		            }
		          }
		    }

Multi Level Cycle	2013-03-05T05:51:16.685	**John Swindall experienced 'Stages of human life cycle'**
	2013-03-05T05:51:31.945	**John Swindall attempted 'Infancy'**
	2013-03-05T05:51:36.521	**John Swindall attempted 'Childhood'**
	2013-03-05T05:51:41.289	**John Swindall attempted 'Adolescence'**

	2013-03-05T05:51:46.770	**John Swindall attempted 'Adulthood'**
	2013-03-05T05:51:50.319	**John Swindall attempted 'Adolescence'**
	2013-03-05T05:51:54.089	**John Swindall attempted 'Adulthood'**
	2013-03-05T05:51:56.140	**John Swindall completed 'Stages of human life cycle'**

Detailed Snippets:

2013-03-05T05:51:16.685

John Swindall experienced 'Stages of human life cycle'

```
{
    "id": "29854297-1f2e-400d-947a-436e5a689963",
      "actor": {
         "name": "John Swindall",
         "account": {
            "homePage": "http://cloud.scorm.com/",
…
"http://www.scorm.com/MultilevelCycle1",
            "definition": {
               "name": {
                  "en-US": "Stages of human life cycle"
               },
               "description": {
                  "en-US": " "
               }
…
   }
}
```

John Swindall attempted 'Infancy'

```
{
   …
         "id":
"http://www.scorm.com/MultilevelCycle2",
         "definition": {
            "name": {
               "en-US": "Infancy"
            },
            "description": {
               "en-US": "That's right! This is a correct match."
            }
         },
         "objectType": "Activity"
….
```

2013-03-05T05:51:31.945

| | ```
                    }
                }
``` |
| 2013-03-05T05:51:36.521 | **John Swindall attempted 'Childhood'**<br>```
{
    …
            "definition": {
                "name": {
                    "en-US": "Childhood"
                },
                "description": {
                    "en-US": "That's right! This is a
correct match."
                }
    …
}
    }
``` |
| 2013-03-05T05:51:41.289 | **John Swindall attempted 'Adolescence'**<br>```
{
    …

"definition": {

"name": {

"en-US": "Adolescence"

},

"description": {

"en-US": "Sorry, Incorrect sequence."

}
        },
    …
    }
}
``` |

	2013-03-05T05:51:46.770	***John Swindall attempted 'Adulthood'***

```
{
    …
            "definition": {
               "name": {
                  "en-US": "Adulthood"
               },
               "description": {
                  "en-US": "Sorry,
Incorrect sequence."
               }
            },
            "objectType": "Activity"
    ….
     }
```

	2013-03-05T05:51:54.089	***John Swindall attempted 'Adulthood'***

```
{

                  "en-US": "Adulthood"
               },
               "description": {
                  "en-US": "That's right! This is
a correct match."
               }
            },
            "objectType": "Activity"
    ….
     }
}
```

	2013-03-05T05:51:56.140	***John Swindall completed 'Stages of human life cycle'***

```
{
    …
            "definition": {
               "name": {
                  "en-US": "Stages of human life
cycle"
               },
               "description": {
                  "en-US": "Total correctly
placed answers are 5
Those are : Birth ,Infancy ,Childhood
,Adolescence ,Adulthood"
               }
            },
            "objectType": "Activity"
    ….
     }
```

Smile Sheet	2013-03-05T07:06:17.090	**John Swindall experienced 'Course Survey'**
	2013-03-05T07:06:58.912	**John Swindall completed 'Course Survey'**

Detailed Snippets:

2013-03-05T07:06:17.090

John Swindall experienced 'Course Survey'

```
{
    …
                "name": {
                    "en-US": "Course Survey"
                },
                "description": {
                    "en-US": " "
    …
}
```

2013-03-05T07:06:58.912

John Swindall completed 'Course Survey'

```
{
    …
                "name": {
                    "en-US": "Course Survey"
                },
                "description": {
                    "en-US": "1. User
instructions: Neutral
2. Glossary: Not Happy
3. Practice exercises: Happy
4. Font, color and size: Very Happy
    …
}
```

Advanced Jigsaw Puzzle	2013-03-05T07:22:19.510	**John Swindall experienced 'The Statue of Liberty'**
	2013-03-05T07:24:14.953	**John Swindall passed 'The Statue of Liberty' with score 0**
	2013-03-05T07:22:19.510	*John Swindall experienced 'The Statue of Liberty'*

```
{
…
                "name": {
                    "en-US": "The Statue of
Liberty"
                },
                "description": {
                    "en-US": " "
…
```

		}

	2013-03-05T07:24:14.953	*John Swindall passed 'The Statue of Liberty' with score 0*
		{
		  …
		        "name": {
		          "en-US": "*The Statue of Liberty*"
		        },
		        "description": {
		          "en-US": "*Congratulations! You have successfully completed the puzzle*."
		        }
		  …
		  }

Picture Show	2013-03-05T07:38:57.973	**John Swindall experienced 'History - The Tutankhamun Collection'**
	2013-03-05T07:39:57.836	**John Swindall completed 'Images Seen: 6'**

	2013-03-05T07:38:57.973	*John Swindall experienced 'History - The Tutankhamun Collection'*
		    {
		    …
		        "name": {
		          "en-US": "*History - The Tutankhamun Collection*"
		        },
		        "description": {
		          "en-US": " "
		        }
		    },
		    "objectType": "Activity"
		    }

	2013-03-05T07:39:57.836	*John Swindall completed 'Images Seen: 6'*
		    {
		        "definition": {
		          "name": {
		            "en-US": "*Images Seen: 6*"
		          },
		          "description": {
		            "en-US": ""
		          }
		        }

Dynamic Bullet List	2013-03-05T07:33:11.521	**John Swindall experienced 'Six Basic Live Processes of All Living Things'**
	2013-03-05T07:34:00.215	**John Swindall completed 'Number of bullets displayed: 6'**

Detailed Snippets:

	2013-03-05T07:33:11.521	*John Swindall experienced 'Six Basic Live Processes of All Living Things'*

```
{
    "id": "8a0e3286-4490-4b2a-922e-602baee1ff9a",
    "actor": {
        "name": "John Swindall",
        "account": {
            "homePage": "http://cloud.scorm.com/",
            "name":
 "KMZXJDSLQS|johnt@harbingergroup.com"
        },
        "objectType": "Agent"
    },
    "verb": {
        "id":
"http://adlnet.gov/expapi/verbs/experienced",
        "display": {
            "und": "experienced"
…
}
```

	2013-03-05T07:34:00.215	*John Swindall completed 'Number of bullets displayed: 6'*

```
{
    …

                "definition": {
                    "name": {
                        "en-US": "Number of bullets
displayed: 6"
                    },
                    "description": {
                        "en-US": ""
                    }
                …
                "description": {
                    "en-US": ""
                }
            },
            "objectType": "Activity"
        }
    }
```

###