

## **Authentication Scenarios for the Content Knowledge for Teaching –Energy (CKT-e) Project**

10/10/13 - FINAL

This document attempts to describe the expectations and scenarios for access to CKT-e project data as proposed to the research team and described to the IRB. As far as RUcore utilization, the project was initially broken in to two different stages; “Project Team Only” and “Long Term Data Sharing”. However, it has evolved into three stages, as described below.

As context, the following language was included in the IRB application for this project:

“Access will be provided to the extent permitted by the IRB’s of participating institutions. The RUcore research data manager will work with the project investigators to anonymize data for broader sharing and to restrict access to individual research products as required to ensure that IRB requirements are fully realized while making as much of the data accessible to a broad audience as is possible. RUcore includes sophisticated access management. Resources or components of resources can be individually restricted for access using XACML (eXtensible access control markup language) to enforce access restrictions in the digital space.”

It is unlikely that the IRB will be interested in the mechanism employed to enable the controlled access described in the project proposal, but it is important to meet the end results described.

### **Project Team Data Storage & Access During the Project Term (AY 2013 through AY2015)**

The initial plan incorporated controlled access to the videos using the RUAnalytic, with local accounts created and maintained within the RUAnalytic utility. Project team members would use the RUAnalytic to mark and code specific video segments for saving and analysis. Due to the size of the video files actually recorded through the project, the performance of the RUAnalytic was inadequate. Thus, we are dividing this “Project Team Only” access model into two phases:

#### **a. Immediate Term Needs – Spring/Summer/Fall 2013**

Spring Semester 2013 Video object storage and access: In April of 2013 we were given 13 video files transcoded by Isaiah into .mov files that range in size from 11 to 768 MB. Given the video size limitations noted above, a password-protected web site was created to access the videos on the Wowza server, and local accounts were created to allow access to the project team that includes Rutgers and non-Rutgers users. The videos along with limited metadata have been made available to the project team for streaming access via this web site. The performance is excellent, but the site does not allow for the marking and sharing of key behavioral observations. In September of 2013, additional videos were received. As of 10/9/13 all content provided to us is all available on the Wowza server, for a total of 33 videos.

#### **b. Remainder of the Project Term (AY 2014, AY 2015)**

For the videos shot in Spring 2014 and Spring 2015, we need to support two key functions that were not available in 2013:

##### **Streaming Video Support from RUAnalytic:**

The RUAnalytic needs to be enhanced to work with the Wowza streaming server. As planned, project team will use the RUAnalytic to identify and annotate video clips that illustrate teaching behaviors that are relevant to the research project and that then can be shared with other

members of the project team for review/comment. It would be desirable for saved analytics to allow for subsequent comments/notes by multiple users, so that all comments can be seen by the project team. This capability needs to be clarified.

*[RUcore and RUAnalytic access to streaming video will be enabled by RUcore version 7.4, scheduled for release in Spring, 2014.]*

**Controlled Access:**

The videos and any other content ingested into RUcore that requires selective visibility and access must not be findable via normal RUcore searching, and must be password protected to comply with IRB agreements. Local accounts for project team members should suffice. As improvements to RUcore security processes are developed, access could be transitioned to the planned “MyRUcore” authentication. Additionally, it will need to be determined whether the Wowza server itself will need security controls, or whether this can be handled via RUcore.

*[Controlled Access will be enabled by RUcore version 7.3, scheduled for release in Fall, 2013.]*

**Long Term Data Sharing (Estimated Starting Date AY2015)**

It is anticipated that a CKT-E project portal will be created to support long-term managed access to the products of this research project to allow varying levels of access to three different classes of users: the original project team, subsequent researchers (the “Community of Practice”, or COP), and the public.

**a. Original Research Team**

Using the RUcore project portal, the original project team members will need access to:

- view and possibly download all data files, all analytics, and all video files
- share observations and analyses with other research team members using the RUAnalytic.

**b. Managed Access to “Community of Practice”**

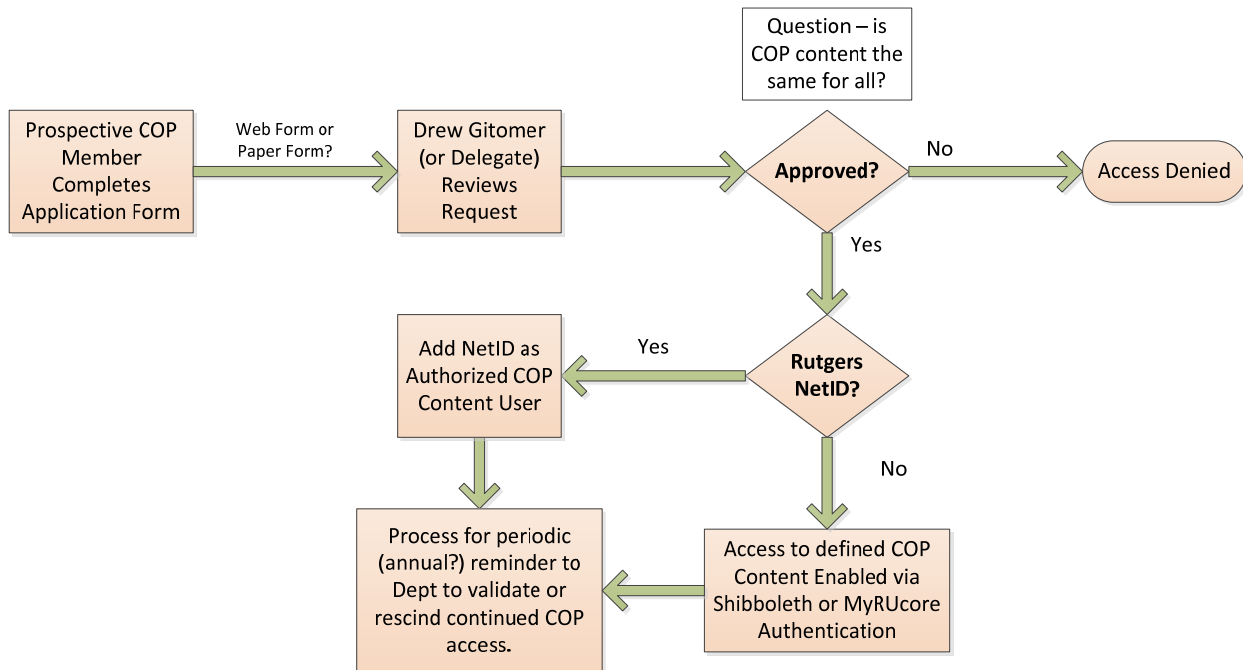
As permitted by the established IRB agreement for this project, the PI, Drew Gitomer, may approve access to the project portal to subsequent researchers beyond the original grant project team. This will require the ability for Dr. Gitomer (or his assigns) to identify who is on the list of users with access to the subset of project data deemed appropriate for COP sharing. This capability is under development by the RUL Software Architecture Working Group, and should be in place with RUcore Version 7.3.

Ultimately, the ongoing management of users added to or removed from the COP should be handled by the COP Manager, which is either Dr. Gitomer or his delegate, so that minimal involvement from RUL staff will be required over the long term.

Members of the COP should have:

- View-only access to streaming videos
- View/download access to all public content
- Ability to create and save analytics (only) on the RUcore system

Anticipated process:



### c. Public Access

Using the standard RUcore interface, the public user can find the project in the list of research projects, or by keyword search of metadata. The public user will be limited to accessing metadata and non-protected data sets, if they exist.

A key question regarding the public access will be how to identify individual RUcore objects as “Public”, “Controlled/COP”, or “Private/Original Project Team”. Interpretation of the last two will need clarification before we move forward on the portal.