INTERSYSTEMS LEARNING SERVICES

InterSystems Change Control

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ICC 600:
Introduction to CCR Tier 2

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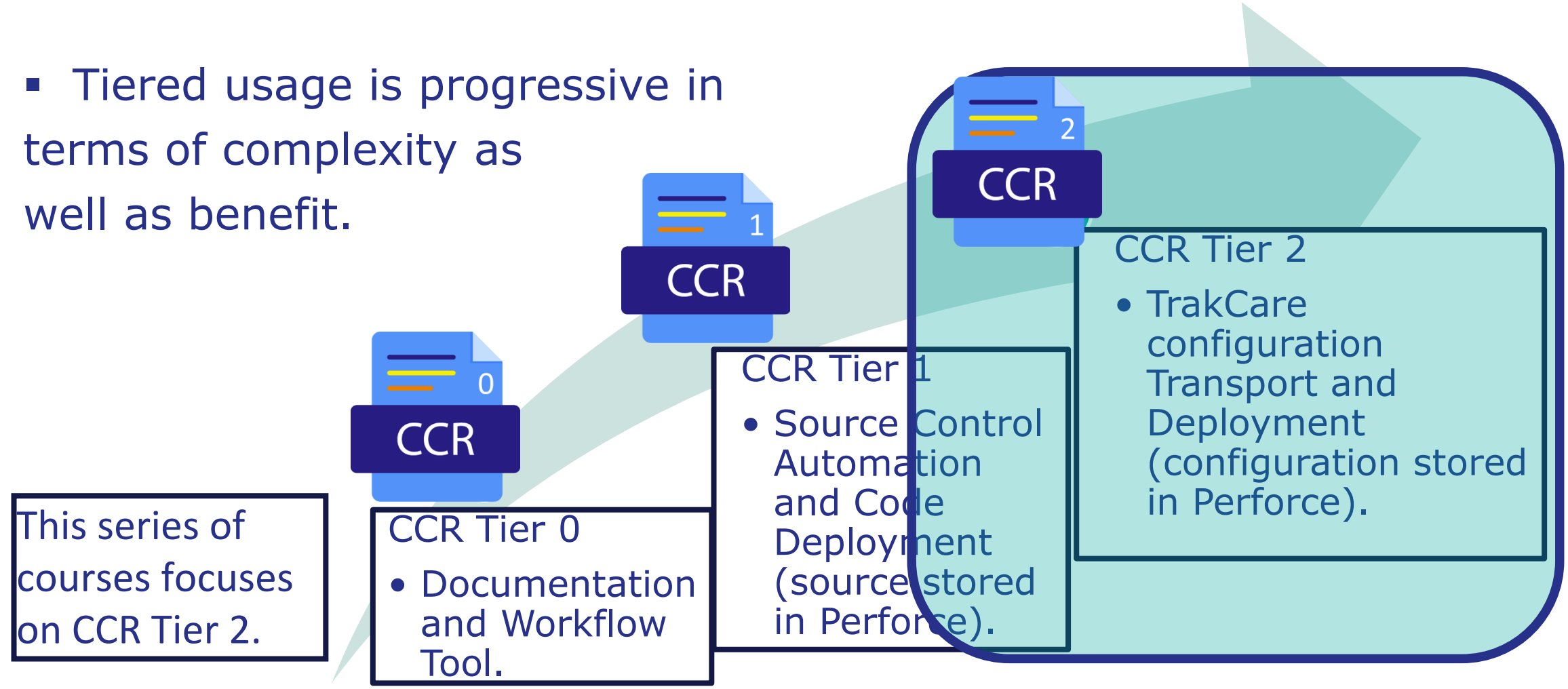
Objectives

- Explain at a high level what CCR Tier 2 means and when it is useful.
- Explain how TCC, ElementXML, and GUIDs are related to CCR Tier 2.
- Identify whether a deeper dive into CCR Tier 2 training material would be beneficial.

Part 1: CCR Tier 2: Working with TrakCare Configuration

Review: CCR Usage Tiers

- Tiered usage is progressive in terms of complexity as well as benefit.



Review: Example types of changes for each CCR Tier

- CCR Tier 0:
  - File system path changes.
  - Memory settings.
  - User creation.
  - Patching.
  - Upgrades.
  - Any manual change to the environment or System.

- CCR Tier 1:
  - Classes.
  - Routines.
  - Reports.
  - CSP Pages.
  - JavaScript.
  - Integration logic.
  - DTL.
  - Productions.

Review: Example types of changes for each CCR Tier (cont.)

- CCR Tier 2:
  - Layouts.
  - Security groups.
  - Code table changes.
  - Workflow.

CCR Tier 2: The Fundamentals

- Tracks all change documentation recorded in CCR Tier 0.
- Records changes made to TrakCare configuration items via TrakCare UI.
- Configuration items versioned within source control.
- Delivery of configuration to or from environments via CCR Transport mechanism.

CCR Tier 2: The Fundamentals (cont.)

- CCR Implementation and Backout Plans autopopulated.
  - Assumes plan is to use CCR Transport.
  - Must update plans if manual steps required.
- ALWAYS use CCR to make changes to Tier 2 controlled items.
  - Circumventing CCR will cause crisis later.

CCR Tier 2: The Audience

- Courses focused on CCR Tier 2 (ICC6nn) are focused on functional and technical topics related to TrakCare sites using CCR.
- Learners for the ICC6nn series should already have working knowledge of CCR Tier 0 usage and how CCR Transport works.
- All CCR users, regardless of whether they use Tier 2 CCRs, should complete this course, ICC600.

Quiz: CCR Tier 2 Applicability

Question:

The remaining CCR Tier 2 training materials are applicable to… Select all that apply.

A. Users who use InterSystems Studio or Atelier for writing custom integration code.

B. Users who primarily work in the InterSystems TrakCare application.

C. Users who work on interoperability productions in the backend of TrakCare.

Quiz: CCR Tier 2 Applicability (cont.)

Answer:

B. Users who primarily work in the InterSystems TrakCare application.

TrakCare application users are the main focus group for CCR Tier 2 training.

Quiz: CCR Tier 2 Functionality

Question:

What distinguishes a Tier 2 CCR from a Tier 0 CCR? Select all that apply.

A. CCR Transport is used to move items to and from environments.

B. Items are versioned within the InterSystems Perforce server.

C. Changes made via Studio or Atelier can be tracked.

D. Configuration updates made through the TrakCare application are automatically tracked.

Quiz: CCR Tier 2 Functionality (cont.)

Answer:

All of the above.

Changes made via Studio can be included in a Tier 2 CCR if there is also TrakCare configuration which is part of the same change. Pure technical changes are typically Tier 1 CCRs.

Quiz: CCR Tier 2 Usage

Question:

Which of the following would require a Tier 2 CCR (and could not be controlled by Tier 1)? Select all that apply.

A. Integration logic.

B. Custom TrakCare code.

C. TrakCare Security Groups.

D. Product upgrades.

E. Hospital configuration changes.

Quiz: CCR Tier 2 Usage (cont.)

Answer:

C. TrakCare Security Groups.

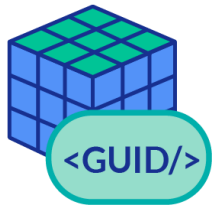
E. Hospital configuration changes.

Product upgrades should be tracked in Tier 0 CCR. All other changes in the above list can be included in a Tier 2 CCR, but only C and E have to be in Tier 2.

Part 2: TCC and ElementXML

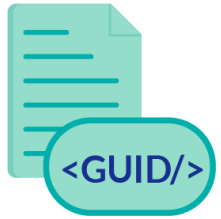
TrakCare Change Control (TCC)

- TrakCare Change Control (TCC) handles import/export of TrakCare configuration.
- TrakCare is made of around 1000 persistent classes storing configuration.
  - User.* - Older classes; covers code tables and transactional data; 75% of data.
  - epr.* - Clincial data configuration; security groups; worklist and epr configuration; 15% of data.
  - websys.* - System data; screen layouts and translations; workflows; reports; 10% of data.



TrakCare Change Control (TCC) (cont.)

- Properties of these classes correspond to fields on page.
  - Some classes have 100+ properties.
- TCC provides a standardised export format for these properties.



GUIDs

- Globally Unique Identifiers.
- Primary keys (usually row id) are not necessarily unique across BASE, TEST, and LIVE.
- Central to TCC's ability to uniquely identify configuration items across different environments.
- Derived from current system time on server when new object is created.
  - Not based on row id.
  - Not based on TrakCare data.

GUIDs (cont.)

- Does not change when object updated.
- Carried through from BASE to TEST to LIVE when adding new object.
- `<User.INCStkBin GUID="EF0832ED-770F-4AF2-8FB9-9DF8F6798005">.`

New Configuration GUID Behavior

- Create configuration in BASE.
  - GUID assigned and associated with primary key within BASE environment.
  - Object exported for CCR Transport includes GUID (but no primary key) in XML.
- Deploy ItemSet to TEST.
  - Item deployed contains GUID.
  - TrakCare assigns primary key (may be different than BASE).
  - Primary key associated to that GUID within TEST environment.

New Configuration GUID Behavior (cont.)

- Deploy ItemSet to LIVE.
  - Item deployed contains GUID.
  - TrakCare assigns primary key (may be different than BASE).
  - Primary key associated to that GUID within LIVE environment.

Editing Configuration GUID Behavior

- Update configuration in BASE.
  - On export, TCC looks up GUID associated with that primary key.
  - Object exported for CCR Transport includes GUID (but no primary key) in XML.
- Deploy ItemSet to TEST.
  - Item deployed contains GUID.
  - TCC looks up primary key for that GUID.
  - Updates object based on primary key.

Editing Configuration GUID Behavior (cont.)

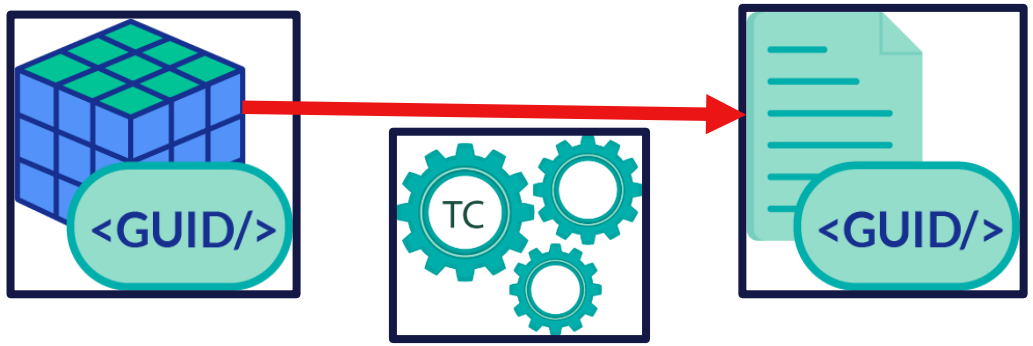
- Deploy ItemSet to LIVE.
  - Item deployed contains GUID.
  - TCC looks up primary key for that GUID.
  - Updates object based on primary key.

ElementXML

- Export format used by TCC.
- XML representation of TrakCare code table and config data.
- All configuration items in TrakCare have an ElementXML representation.
- These may get complex.
  - Nested code tables.
  - References between configuration.
- Each XML file is one row in a code table.
  - The children of that row might also be included, depending on the table.

ElementXML and GUIDs

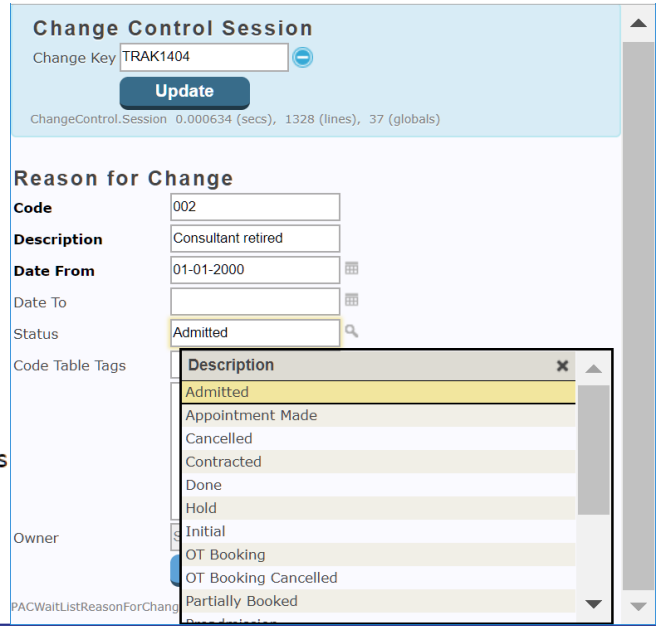
- Every piece of exportable configuration must have a GUID assigned.
  - GUIDs must be consistent across **all** environments in a **System**.
  - File name is GUID.
- ElementXML document imported into TEST/LIVE creates 1+ rows of TrakCare configuration.



ElementXML Example

- Some code tables reference other tables.
- Use GUID in reference.
- Example: Reason for Change references Status.

```
<?xml version="1.0" encoding="UTF-8"?>
<Export>
  <User.PACWaitListReasonForChange GUID="5A0E0ADF-83AC-48E7-858F-D90A851B9A30">
    <WLRCCode>002</WLRCCode>
    <WLRCDesc>Consultant retired</WLRCDesc>
    <WLRCWLStatusDR>D3ABA084-4898-11E2-84CF-5056803BE100</WLRCWLStatusDR>
    <WLRCDateFrom>2000-01-01</WLRCDateFrom>
  </User.PACWaitListReasonForChange>
  <Information GUID="5A0E0ADF-83AC-48E7-858F-D90A851B9A30">
    <Id>1</Id>
    <ClassName>User.PACWaitListReasonForChange</ClassName>
    <Description>Consultantretired</Description>
    <Content>
      <Class Version="//trak/main/DEV/cls/User/PACWaitListReasonForChange.xml#15">User.PACWaitListReasonForChange</Clas
    </Content>
  </Information>
</Export>
```



Quiz: TCC

Question:

What does ‘TCC’ stand for?

A. Transporting Content via CCR.

B. TrakCare Configuration Changes.

C. Transport Change Controls.

D. TrakCare Change Control.

Quiz: TCC (cont.)

Answer:

D. TrakCare Change Control.

TCC is part of the TrakCare product and should be understood as a TrakCare feature. Issues with its functionality should follow normal reporting and escalation process for the TrakCare product.

Quiz: ElementXML

Question:

How does ElementXML relate to TCC?

A. ElementXML was a legacy feature replaced by TCC.

B. ElementXML is the XML export format used by TCC.

C. ElementXML is not related to TCC.

Quiz: ElementXML (cont.)

Answer:

B. ElementXML is the XML export format used by TCC.

ElementXML controls export of TrakCare configuration, and handles logic related to import. Historically, ‘ElementXML’ was used to refer to anything in TrakCare dealing with change control, but now ElementXML just refers to import/export mechanisms of TCC.

Quiz: Identifiers

Question:

What acts as a unique configuration identifier between different TrakCare instances?

A. OID.

B. ID.

C. TCC-ID.

D. GUID.

E. Code and Description.

Quiz: Identifiers (cont.)

Answer:

D. GUID.

GUIDs are unique between instances and are the critical piece for movement of TrakCare configuration between environments.

Areas for Further Study for CCR Tier 2

- ICC610 – Usage Basics.
- ICC615 – Debugging Basics.
- ICC620 – Baselining TrakCare Configuration.
- ICC630 – Debugging and Advanced Topics.

Summary

- What are the key points for this module?