

Developing Advanced Units of Learning Using IMS Learning Design Level C

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Developing Advanced Units of Learning Using IMS Learning Design Level C

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Content

- Perspective of presentation: *developer* (not designer or user)
- Introduction to LD level C
 - Notifications
- Examples of advanced pedagogical functions
 - Notify teachers and learners about workflow milestones
 - Set new activities, depending on events in the system
 - Create systems based on automatic task selection
 - Create software agents that work global on a set of units of learning

From Level A to level B

*Level B Adds **dynamics** to the learning design:*

- adaptation of activities, plays, etc.
- adaptation of external resources
- digital portfolio's
- advanced sequencing
- model new and classical forms of assessment
- change content in runtime through properties
- ask input from users, support interactions for collaborative learning
- calculations
- ...

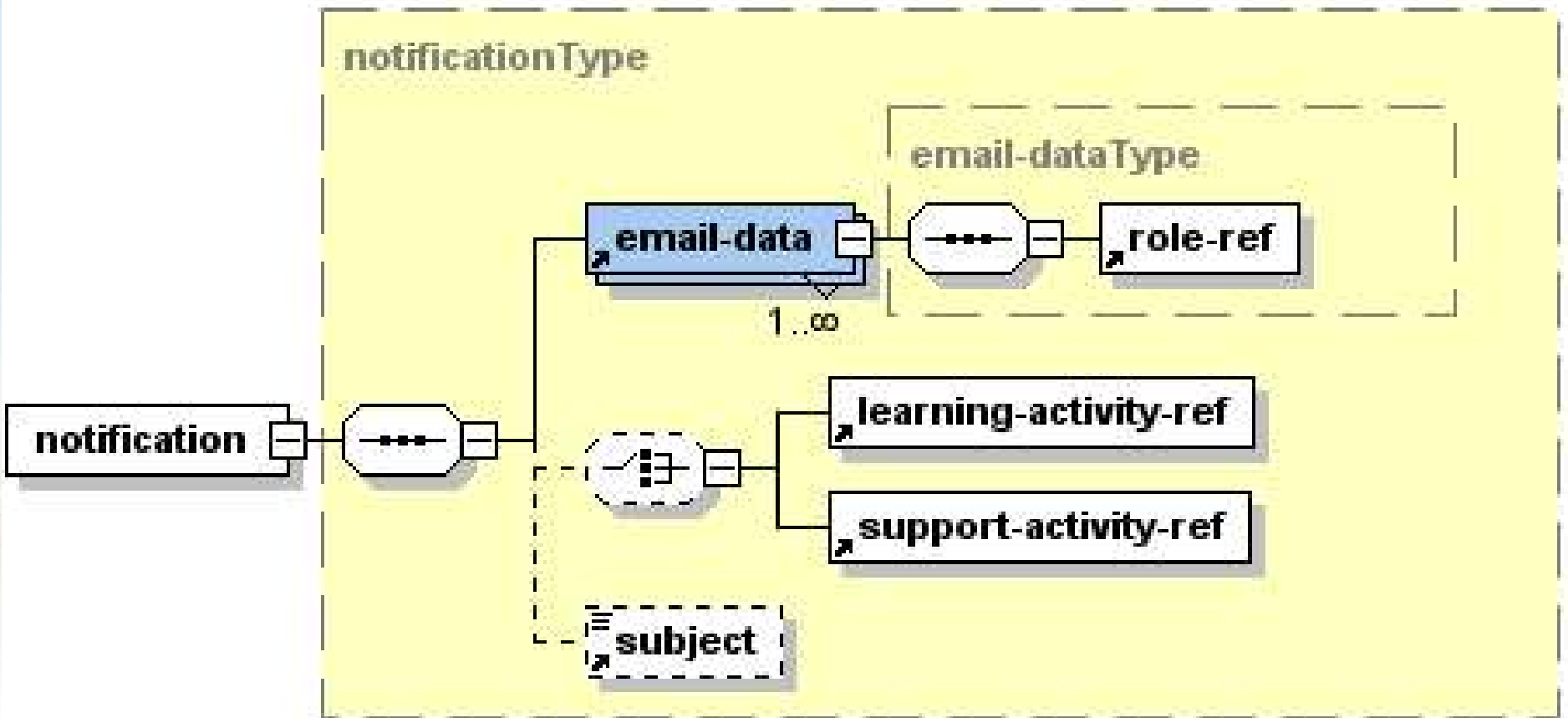
From level B to level C

- Level C adds **notifications** to the learning design:
 - The *on-completion* model is extended with a notification element.
 - The *then* model is extended with a notification element.
 - Global elements *set-property* and *set-property-group* are both extended with a notification element

Notifications: Why Notifications?

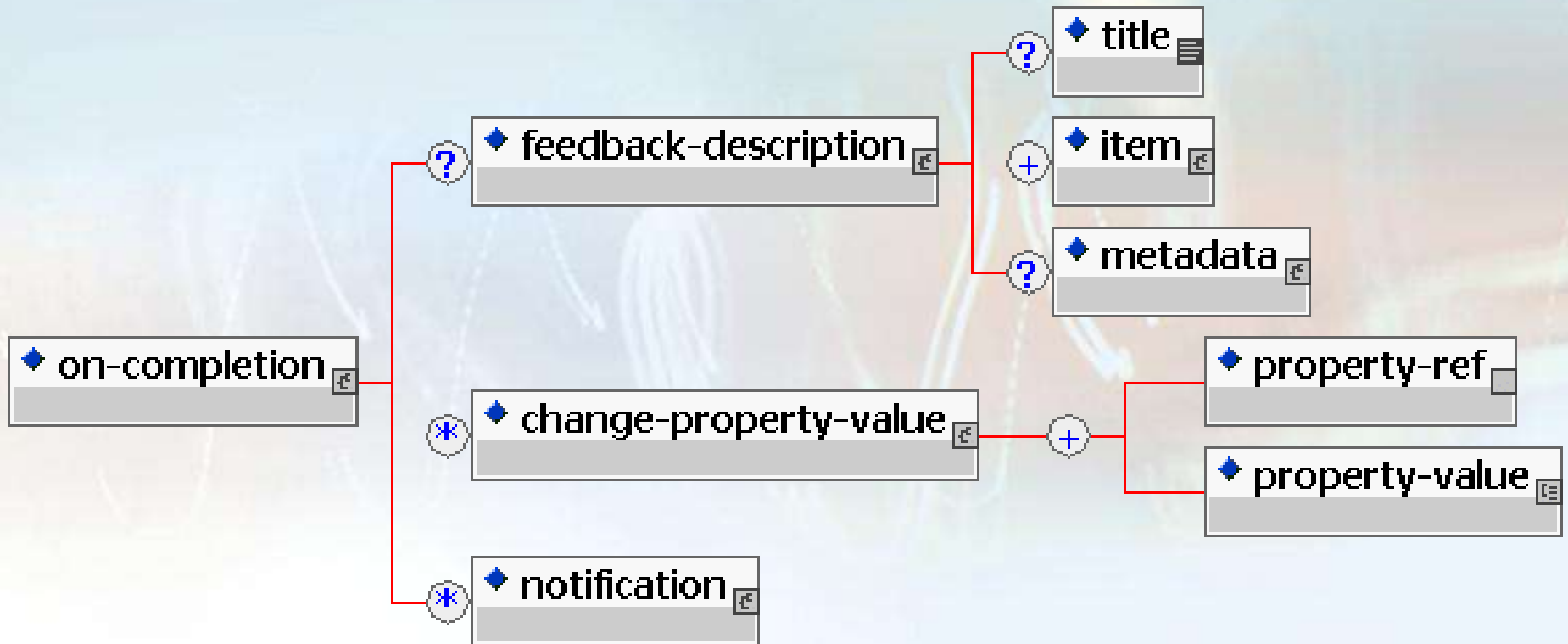
- When properties change, users can be informed
- When activities are completed by a user, some other users can be informed or can have new tasks
- When the pedagogical design is not fixed, but rule-based this is one of the ways to implement such designs
- To support the creation of software agents in LD that can notify users in other units of learning when certain events happen.

Structure of a notification

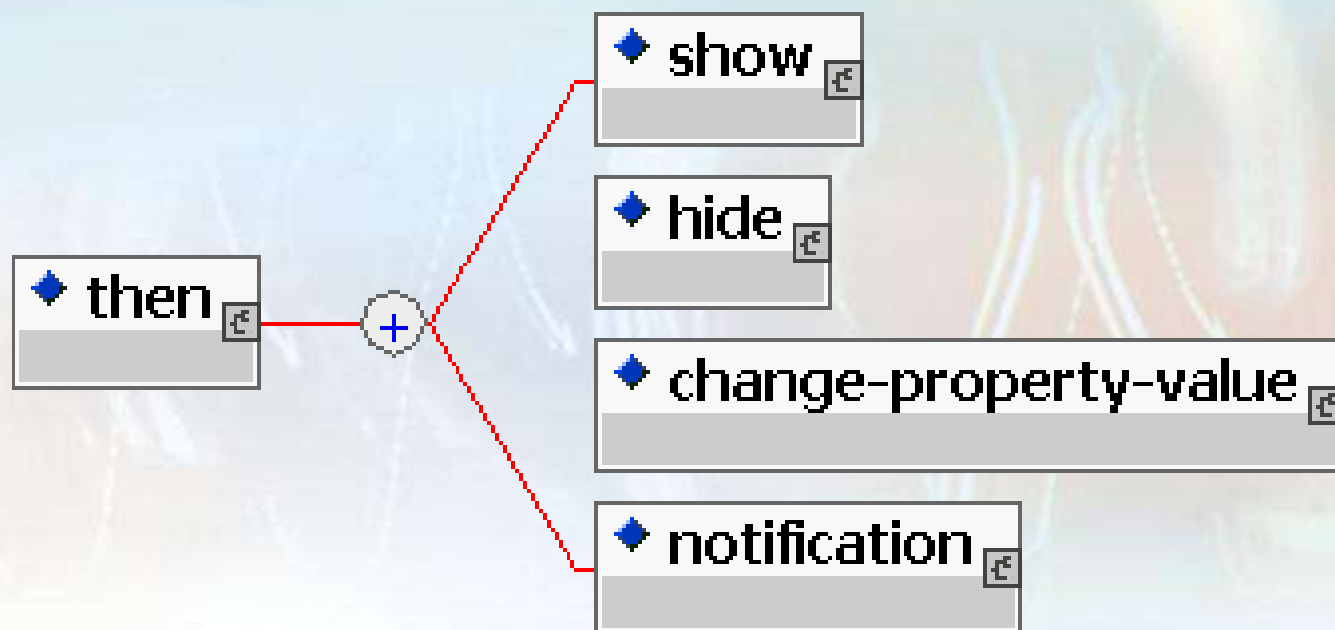


email-property-ref	xs:anyURI	required
username-property-ref	xs:anyURI	

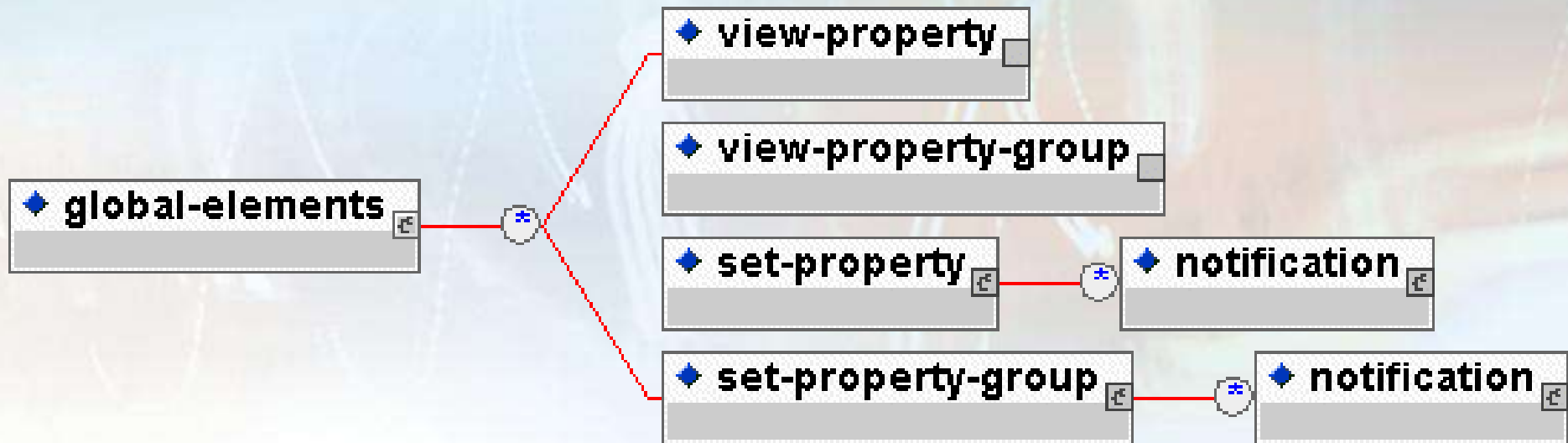
On-completion Model



Then Model



Set-property & set-property-group



Creating Notifications

- Create an email property (e.g. locpers of globpers property)
- Create activities with visibility attribute is 'false'
- Put these in an activity-structure (mainly of type 'selection')
- Set a notification (e.g. when a property value changes)
- The email property should be filled (asking users, filling it in from a database)
- The notification will:
 - a. Send an email to the persons in the role notifying a message and/or a new activity (with link)
 - b. Make the invisible activity visible

Examples

Notify teachers and learners about workflow milestones

Common Scenario 1:

- Student activity: write report, send to teacher
- When student sends in report: teacher gets a message that student has send in the report
- When the teacher has graded the report the student is notified with the grade.

Other scenario's

- Notify teacher when students fails to pass a test
- Notify students when other students have results
- ...

Set new activities depending on events

- When students fail to pass a test: a new activity can be assigned
- When a property has a certain value, certain activities are presented to certain users (e.g. non-native speakers get some additional activities)
- Teacher gets a new task per student to grade a report or to do some other work
- ...

Dynamic task selection

Rule based system:

If (student property $X = a$, AND
student property $Y = b$)
Then assign activity N (through a notification)

If (student property $X = c$, AND
student property $Y = b$)
Then assign activity M (through a notification)

etc.

Software Agents in LD

- UOL A acts as a software agent
- UOL B,C & D are regular UOLs

Uses: a combination of global properties & notifications

UOL A:

- *If* (certain pattern in global-properties K,L,M)
Then assign new activity (via notifications)
- UOL B,C & D can be any UOLs, but with joint global-properties K,L & M (e.g. LIP elements)
- (variant: set property in A and read property/set new task in B,C & D)

Questions, Discussion, ...