Axart – Enabling collaborative works with Active XML Artifacts

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- Data-centric Workflow for ActiveXML artifacts
- Tree-patterns-based updates enforcing access control
- Dynamic modification of Workflow

Scenario of the demonstration

Basic workflow

- A director wants to find actors for roles of his new film using a *Film artifact* and some *FilmRole sub-artifacts* for each role.
- Each actor applies to some roles using *FilmRoleApplication artifacts*.
- The casting assistant checks that the application is valid and schedules an audition via a *FRAAudition artifact*.
- The two panel members chosen by the assistant valid or reject the actor for the role.
- The director chooses an actor for each role.

Dynamic modification of the workflow

- The panel members may ask a new audition if they disagree, by *specializing* the FRAAudition artifact.
- The director may accept a given actor for a role without audition by *extending* the FilmRoleApplication artifacts.

The main features

Definition of workflow

- States with static constraints (general and by state)
- Basic workflow defined by transitions with constraints on data evolution
- Functions defined by tree pattern queries with access control constraints

Dynamic modification of the workflow

- Constrained by state and access control
- Specialization by restricting the constraints
- Extension by relaxing the constraints or adding transitions

Used techniques

- View maintenance techniques
- Relevance of a functions call for a query
- Manipulation of generalized tuples

System architecture

GUI management

Artifact	Schema	State	Activable functions
Artifact1	FilmRole	Initialized	?newFilmRoleApplication (constraints1)
Artifact2	FilmRoleApplication	Initialized	?accept (constraint2) ?reject (constraint3)
Artifact3	FilmRoleApplication	Rejected	

Artifact management
- Deploys patterns according to workflow
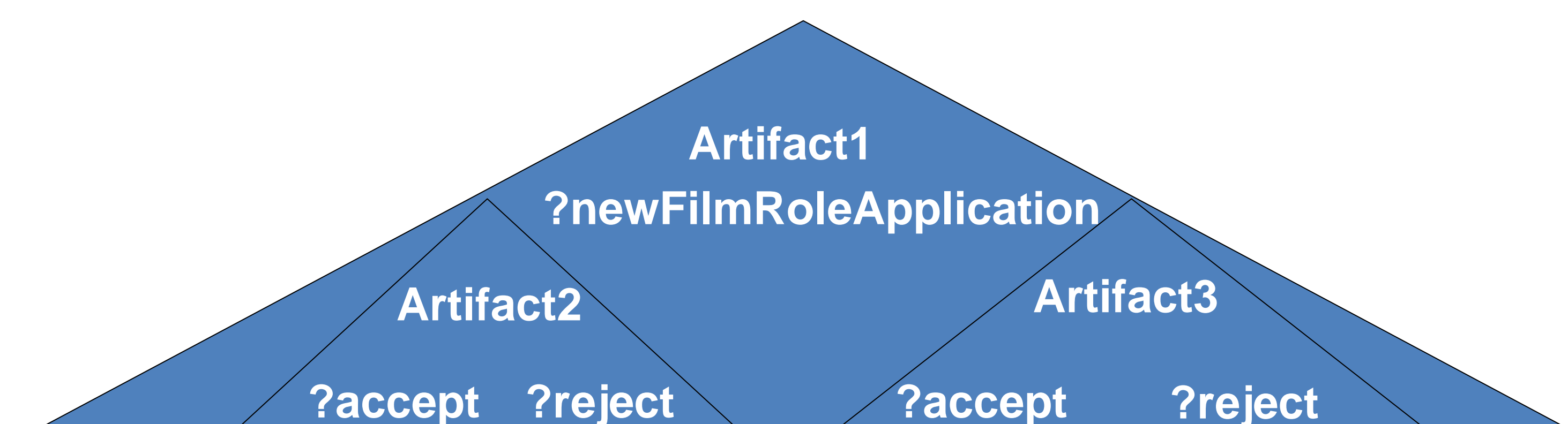- Manages artifacts states and updates

Pattern1	
Artifact1	Tuple1

Pattern2	
Artifact2	Tuple2
Artifact3	Tuple3

Pattern3	
Artifact2	Tuple4
Artifact3	Tuple5

Data and View management
- Monitors views defined by tree pattern queries using Axlog System
- Executes embedded AXML service calls

Artifact1
?newFilmRoleApplication

Artifact2
?accept ?reject

Artifact3
?accept ?reject

More about ActiveXML artifacts

- *The AXML Artifact Model*
Serge Abiteboul, Pierre Bourhis, Alban Galland, Bogdan Marinoiu, Time09
- *Static analysis of active XML systems*
Serge Abiteboul, Luc Segoufin, Victor Vianu, PODS08
- *Comparing Workflow Specification Languages: A Matter of Views*
Serge Abiteboul, Pierre Bourhis, Victor Vianu. Manuscript