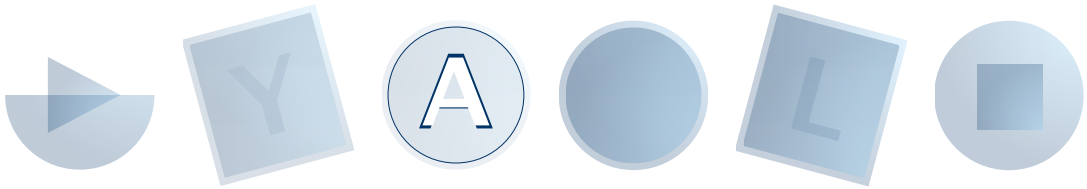

Next-Generation Business Process Management with YAWL

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Acknowledgement

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  - Wil van der Aalst, TUE & QUT
  - Michael Adams, QUT
  - Lachlan Aldred, QUT
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  - Marcello La Rosa, QUT
  - Nick Russell, QUT
  - Chun Ouyang, QUT
  - Katie Shortland, AFTRS
  - Kenneth Wang, QUT
  - Petia Wohed, SU/KTH
  - Moe Wynn, QUT

Outline

- Background – WfMS and PAIS
- Conceptual Foundation - the Workflow Patterns Initiative
  - Part I
    - Control-flow patterns
    - Data patterns
    - Resource patterns
- Next-Generation Business Process Management with YAWL
  - Part II
    - The YAWL language
    - The YAWL system

Problems in the field of Workflow/BPM

- **Lack of commonly accepted conceptual foundations**
- **Lack of proper formal foundations (this despite the amount of buzz …)**
- **No lack of proposed standards …**
- Tools are typically hard to use, expensive and not easily integrated
- Lack of support for processes that need to change on-the-fly
- Lack of proper support for exceptions
- Limited support for design time analysis (verification and validation)
- Resource perspective particularly underwhelming
- Insufficient support for inter-process communication

Workflow 2.0

- Strong multi-perspective integrated support
- Support for the full BPM lifecycle
  - Configuration
  - Modelling
  - Pre-execution analysis (both simulation & verification)
  - Execution *(close link to modelling)*
  - Monitoring
  - Post-execution analysis
- Flexibility support
  - Exception handling
  - Declarative workflow
  - Evolving workflow
- Service-oriented architecture

YAWL Overview

- Collaboration between TU/e and QUT
- Based on Workflow Patterns Initiative
- YAWL: 2002 – newYAWL: 2007
- System development
  - Open source (currently LGPL)
  - Governed by YAWL Foundation
  - Industry collaboration
    - M2 Investments – first:telecom (2004 -)
    - Intercontinental Hotels Group (2005 - 2007)
    - GECKO (2008 -)
- Main publication
  - W.M.P. van der Aalst and A.H.M. ter Hofstede. YAWL: Yet Another Workflow Language, Information Systems 30(4):245-275, 2005
- URLs:
  - www.yawlfoundation.org (research)
  - www.sourceforge.net/projects/yawl (system)
  - http://www.yawlgroup.com (consultancy)

YAWL Highlights

- **YAWL**
  - Based on the (old) control-flow patterns
  - Extends Petri nets
  - Formal Foundation
  - Verification
  - Dynamic workflow
  - Declarative workflow
  - Exception handling

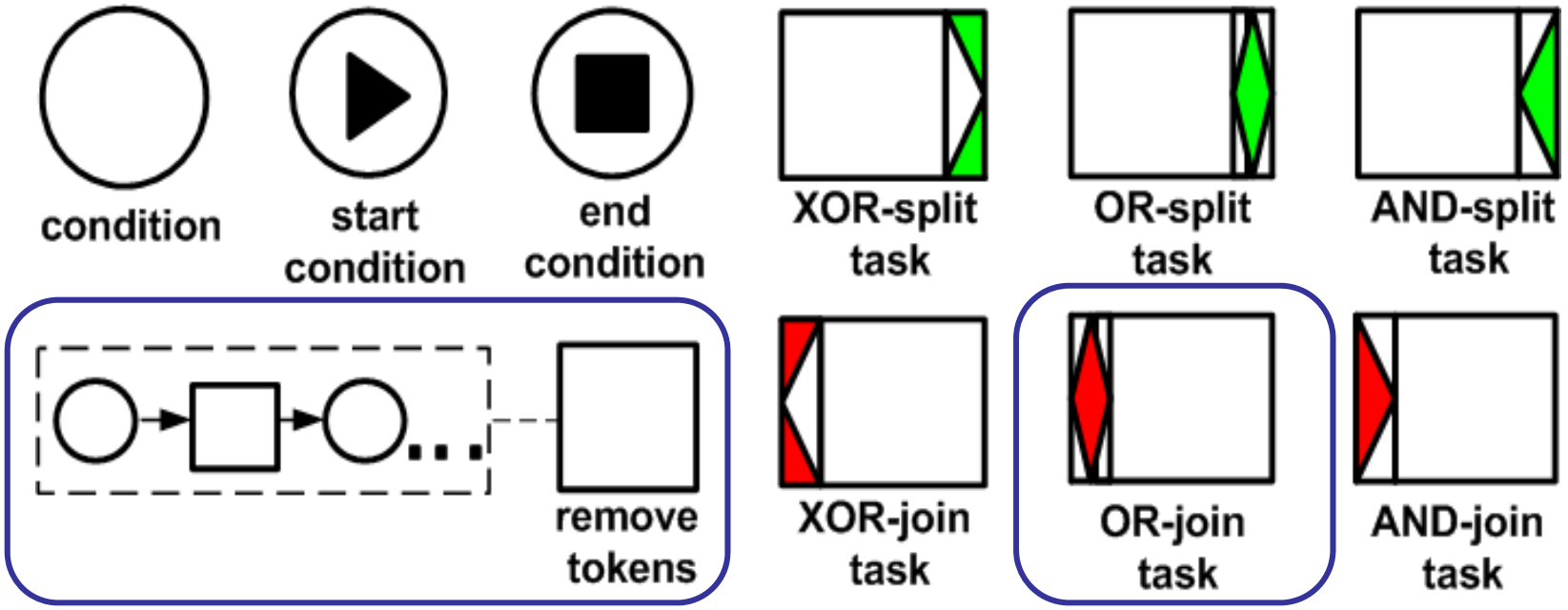
- **YAWL System**
  - Open source
  - Service oriented architecture
  - Production class
  - Comprehensive support for control-flow and resource patterns
  - Strong support for flexibility
  - Link to ProM for post-execution analysis and simulation

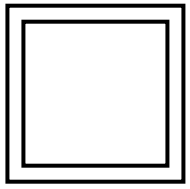
YAWL vs Petri nets

- Petri nets have difficulties capturing:
  - The General Synchronising Merge
  - Patterns involving Multiple Instances
  - Cancellation of a certain part of a process

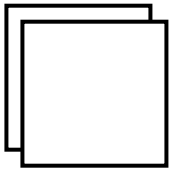
- For the Control Flow Perspective, YAWL takes some concepts from Petri nets and adds constructs for:
  - OR-join to deal with General Synchronising Merge
  - Multiple Instance (MI) tasks
  - Cancellation regions
  - “Syntactic Sugar” (various splits/joins, direct connections between tasks)

YAWL notation



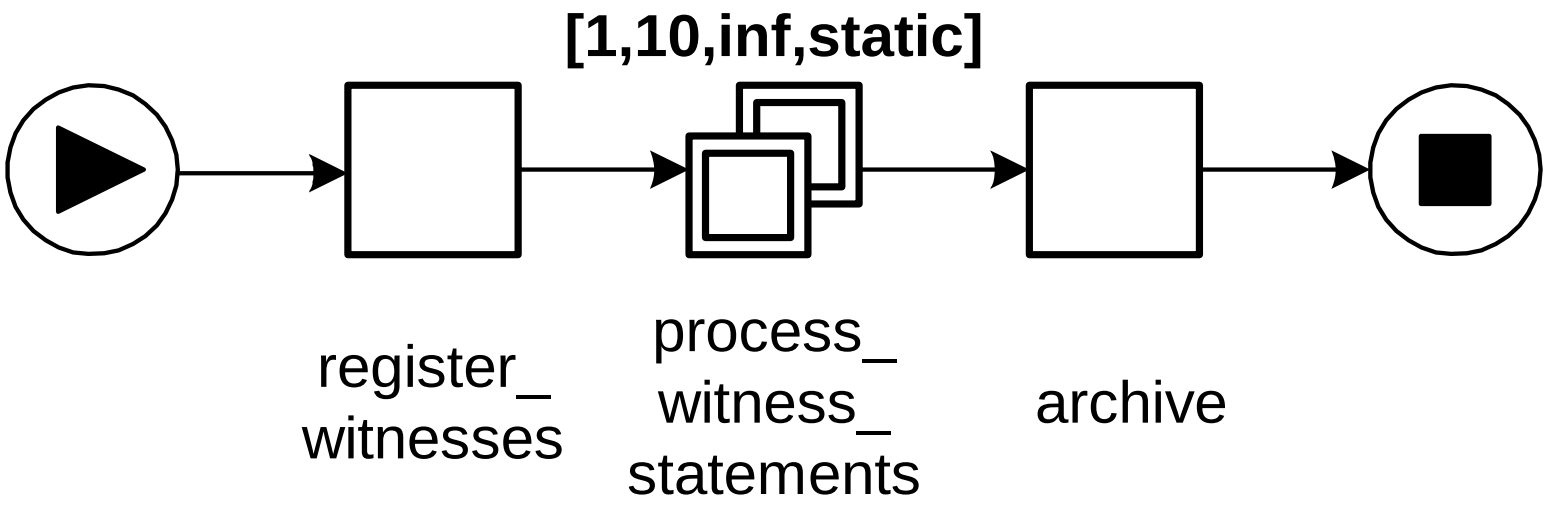


Composite task



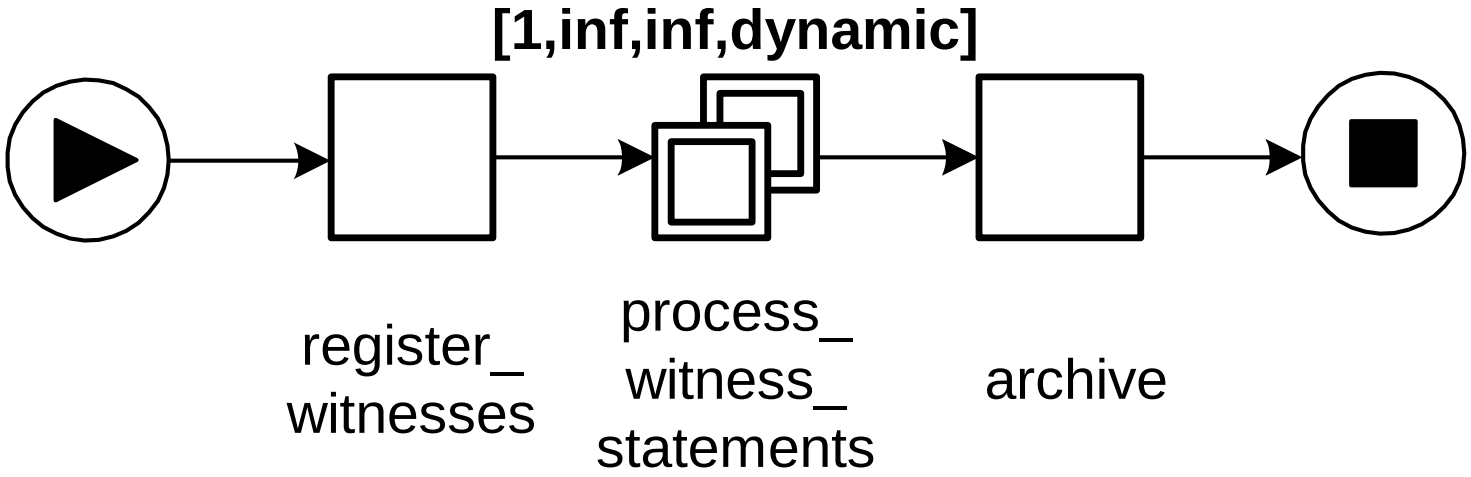
Multiple Instance task

Multiple Instances Example I



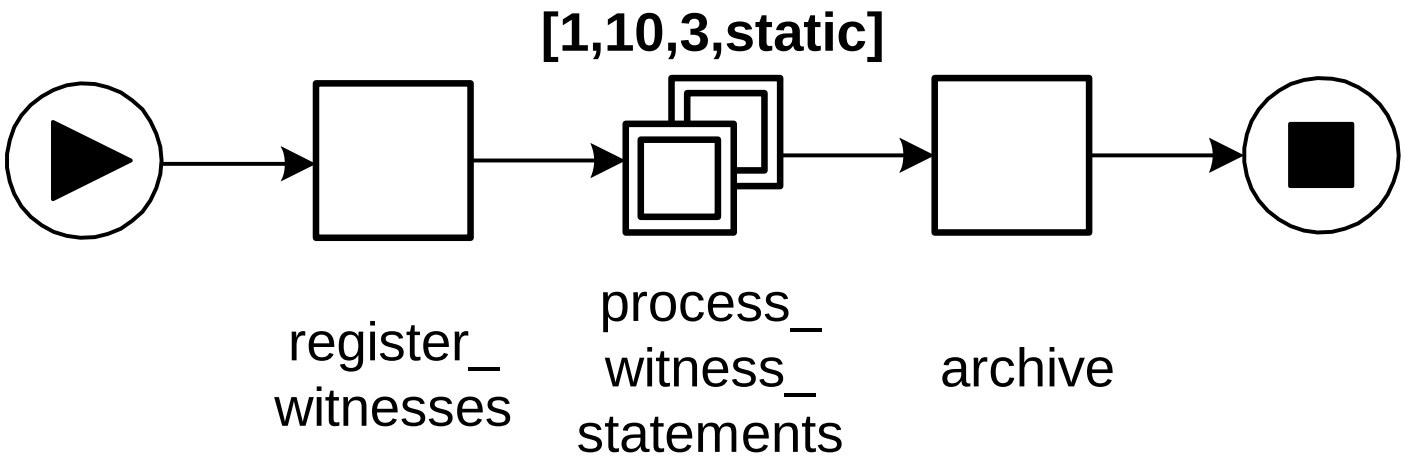
In between 1 and 10 witness statements are processed, witnesses cannot be added after registation of them has finished

Multiple Instances Example II



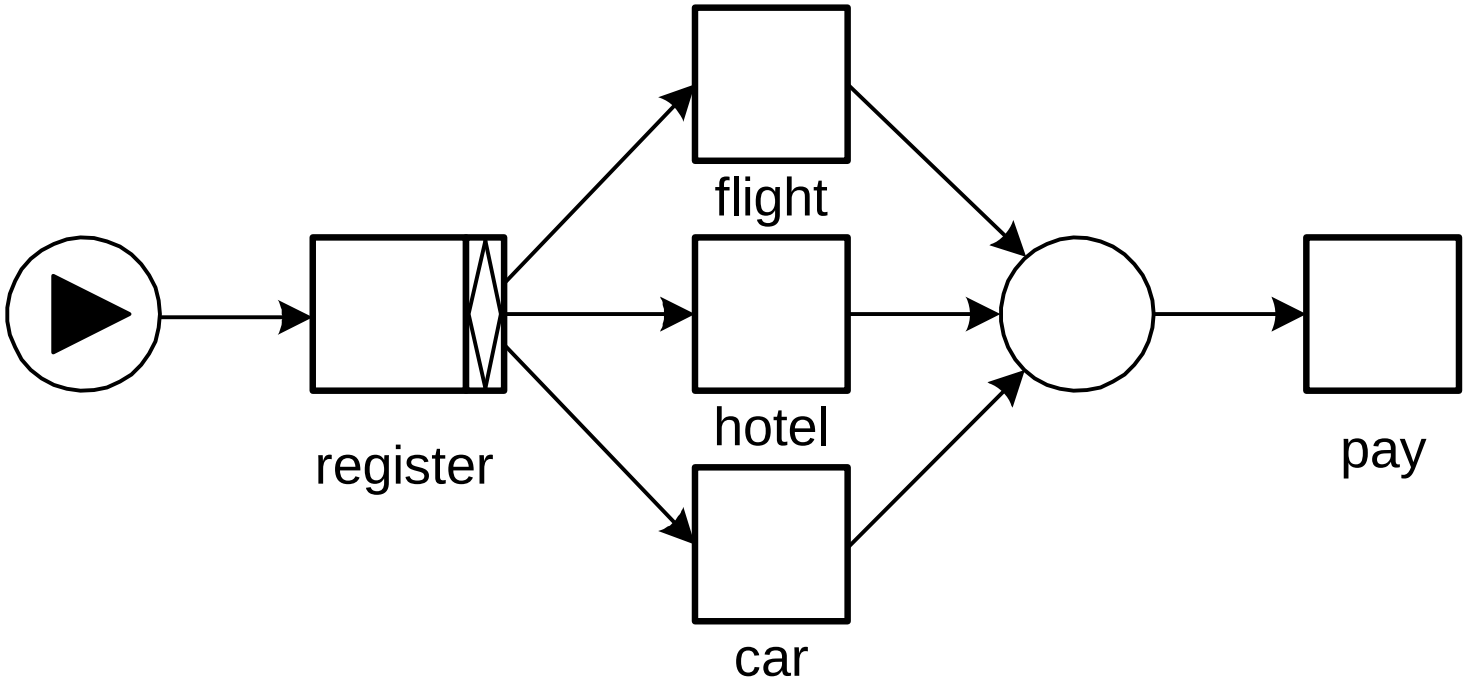
An arbitrary number of witnesses can be processed, furthermore, more witnesses can be incorporated after processgin has started but before archiving

Multiple Instances Example III

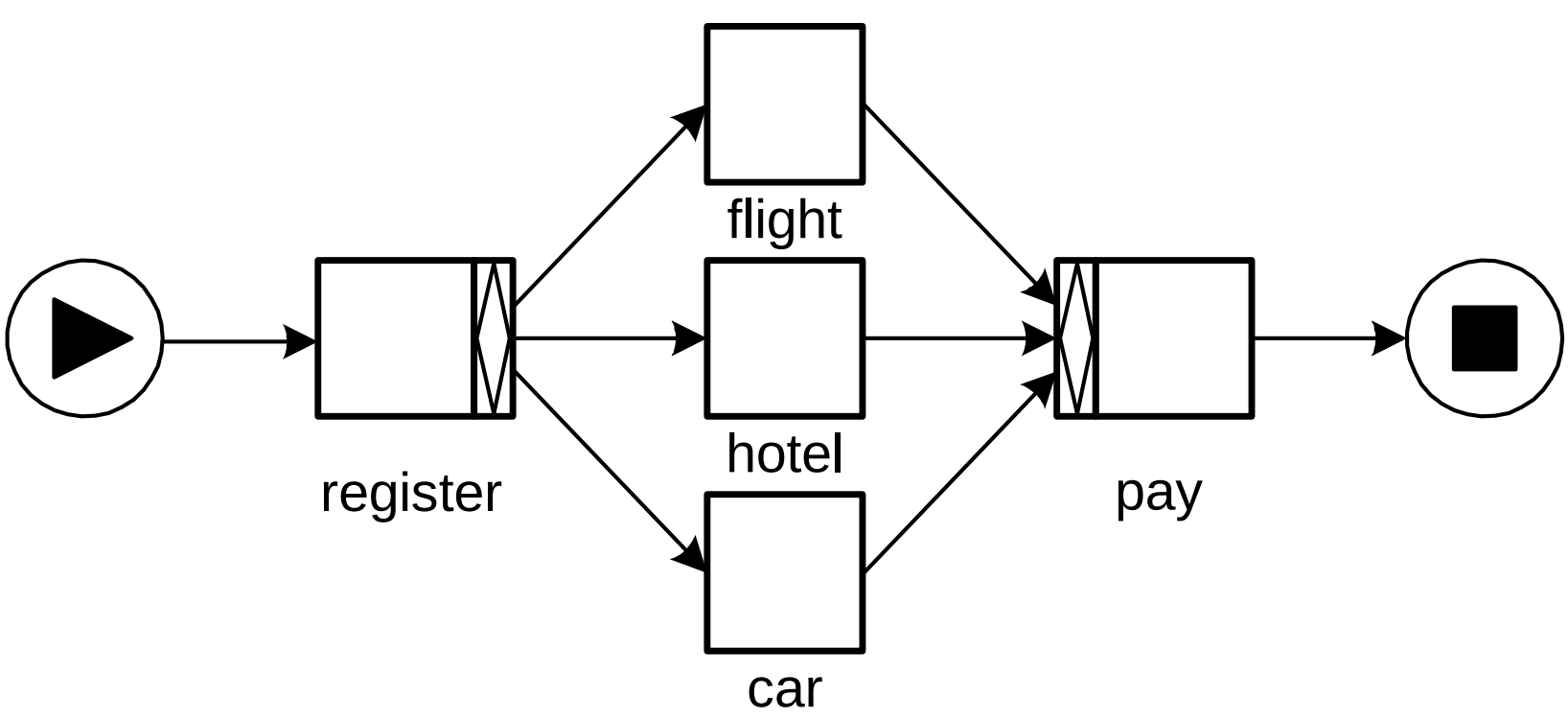


In between 1 and 10 witness statements are to be processed; after three statements have been processed, or all that were started initially, archiving can start

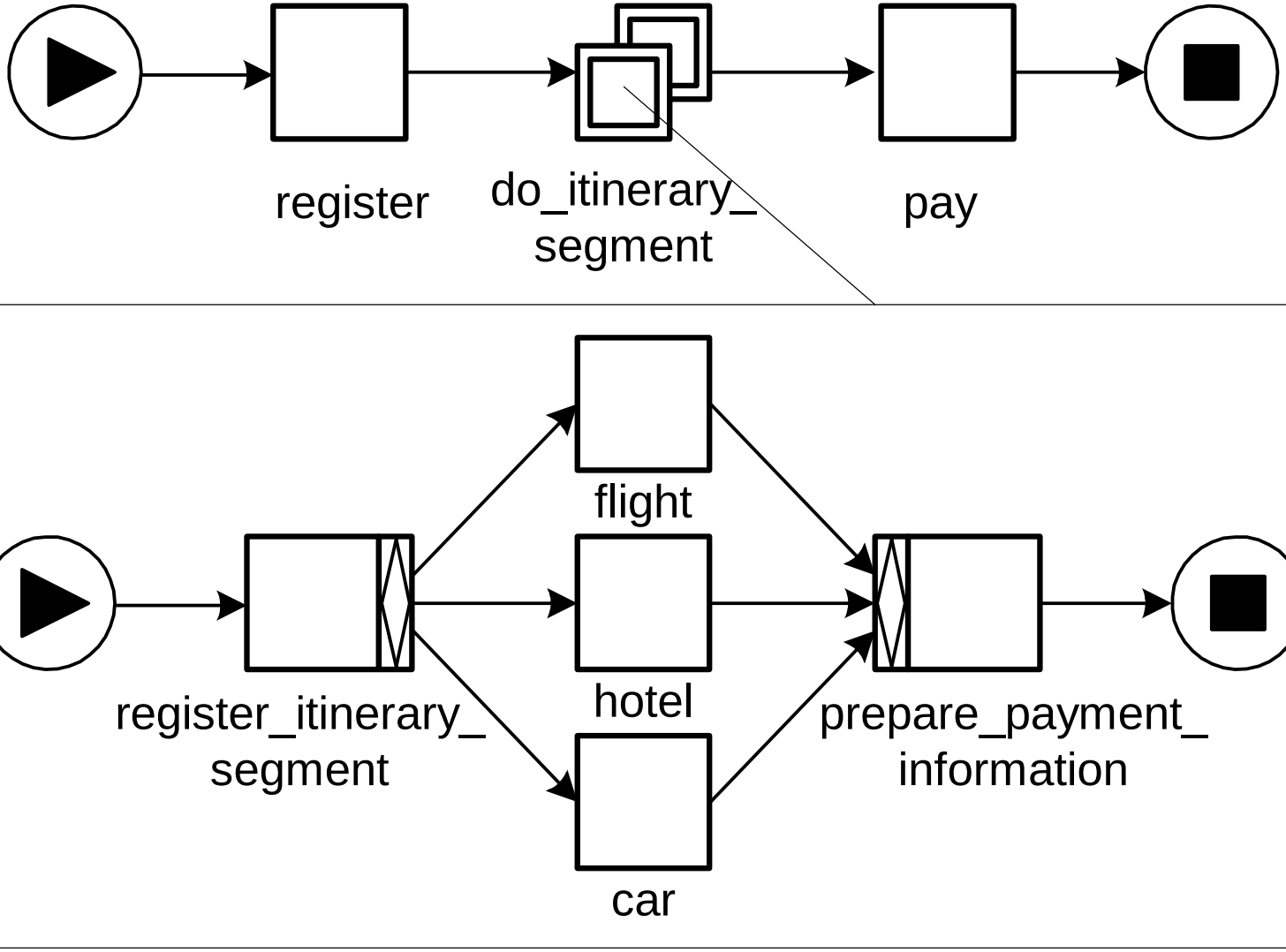
General YAWL Example I



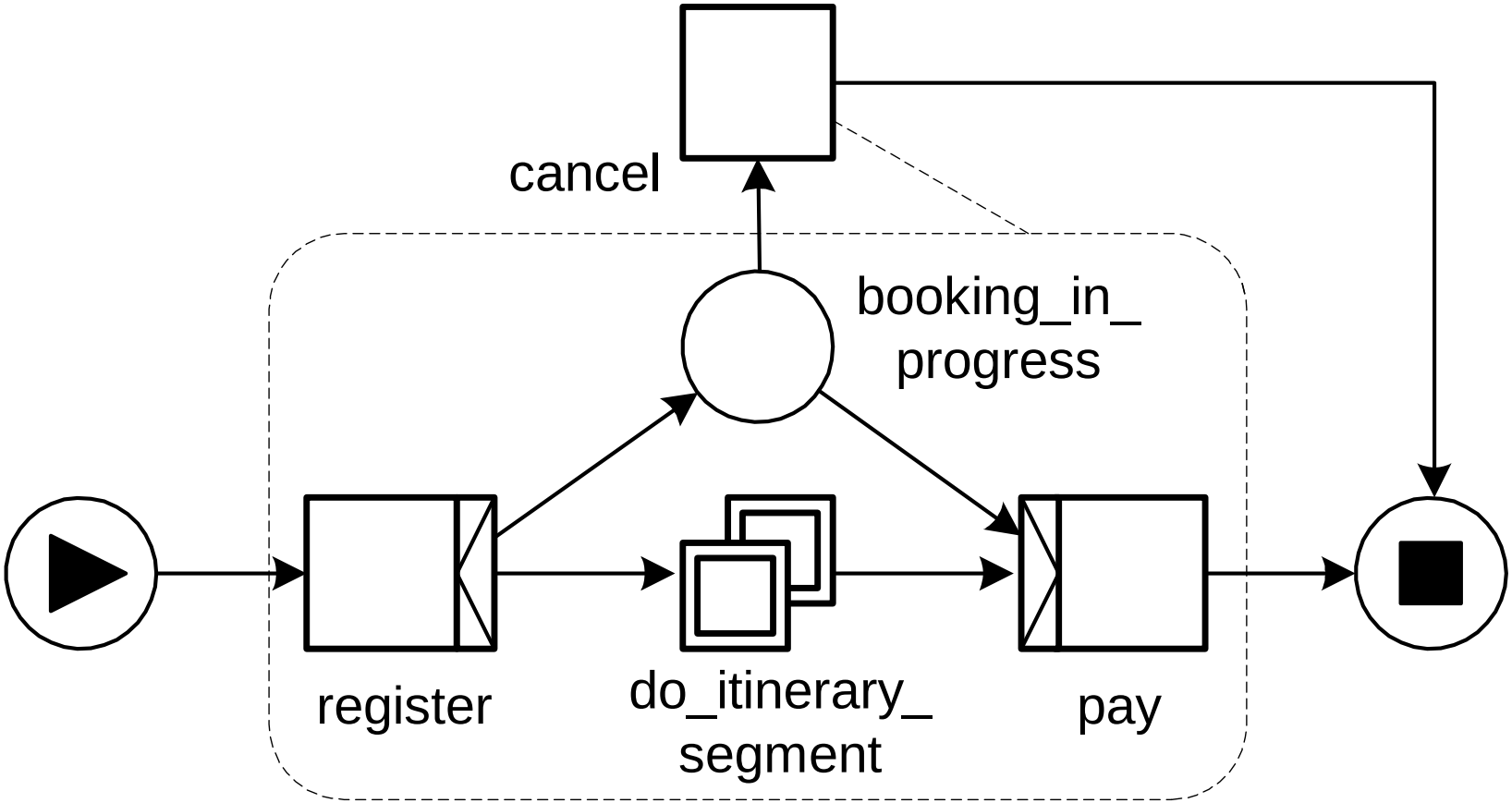
General YAWL Example II



General YAWL Example III



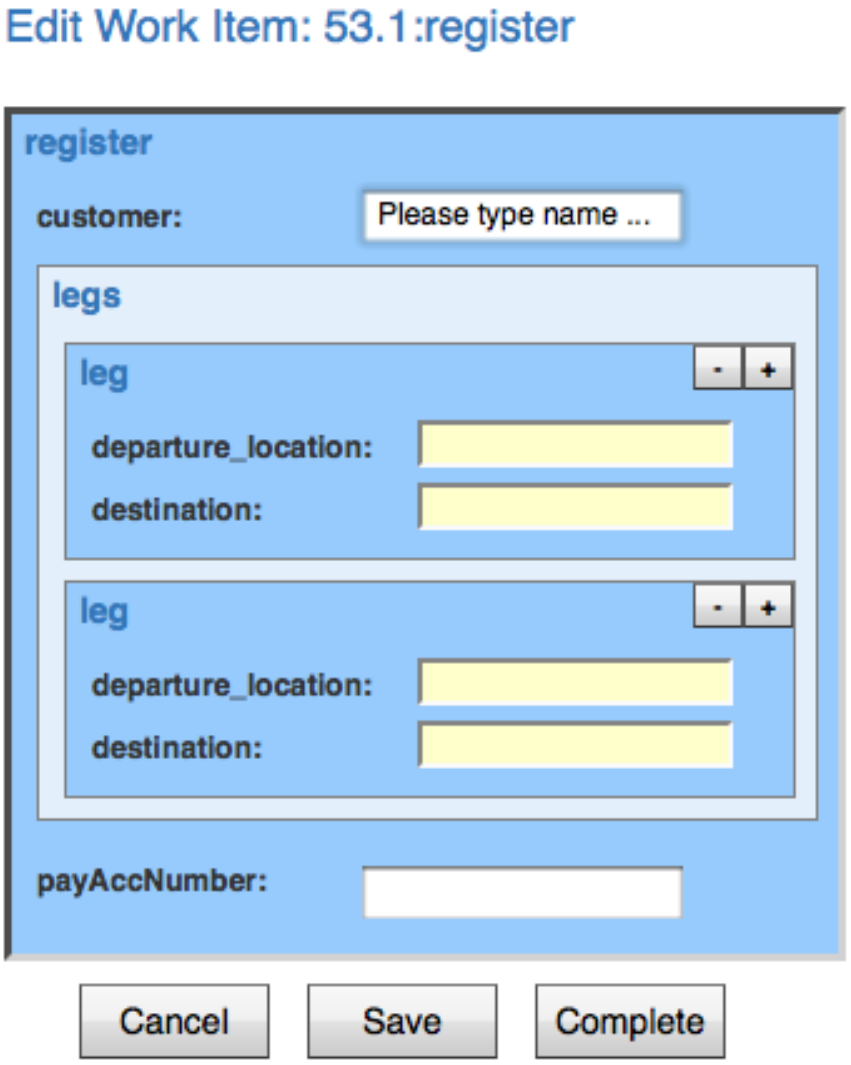
General YAWL Example IV



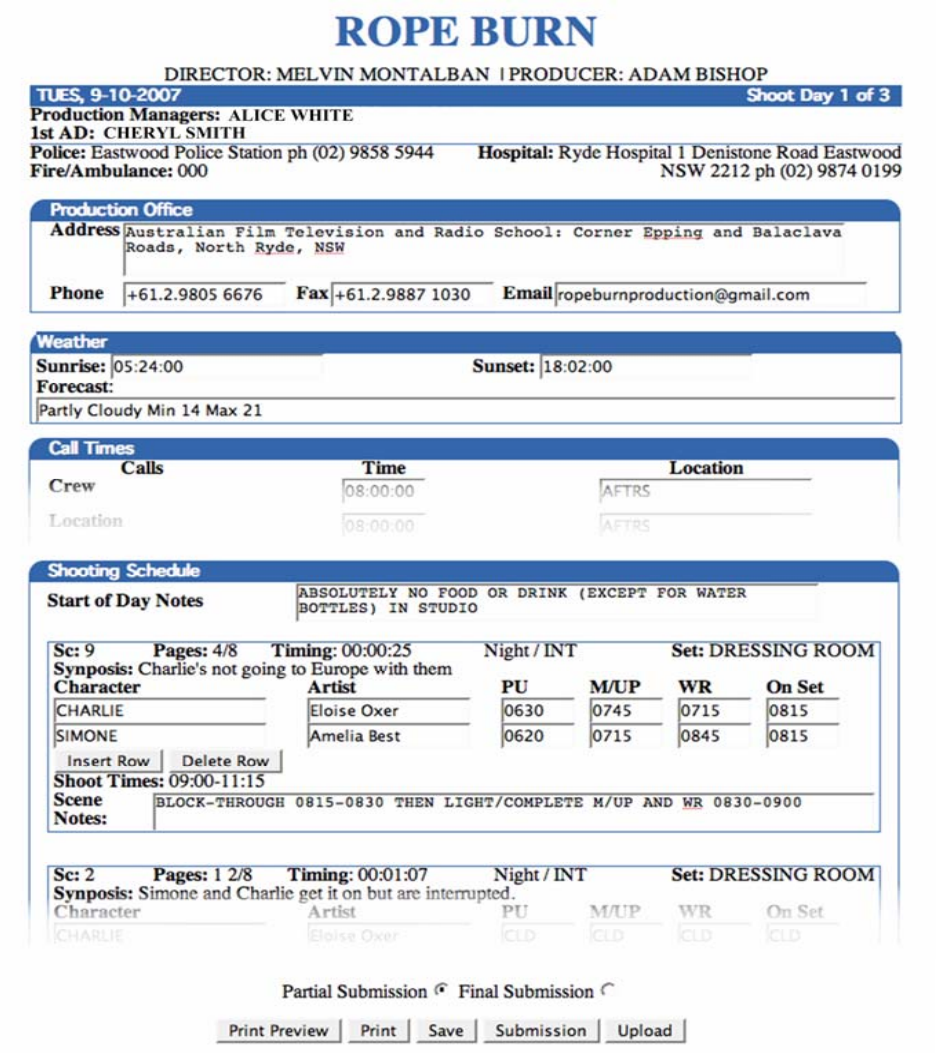
The YAWL System

- Engine, Graphical Editor
- Custom YAWL Services (e.g. Declare, Worklets, Digital Signature)
- First release November 2003, Open Sourced in May 2004
- Perspectives:
  - Control-flow: comprehensive support
  - Data: using XML technologies
  - Resource: comprehensive support
  - Operational: tasks can be linked to web services, but also to codelets
- Service-oriented architecture
- Automated form generation
- Support for dynamic workflow and exception handling
- Support for design time verification
- Persistence (thanks to first:utility)
- Link to ProM

Native use of XML: Generation of XForms



Custom Forms



ROPE BURN

DIRECTOR: MELVIN MONTALBAN | PRODUCER: ADAM BISHOP

TUES, 9-10-2007 — **Shoot Day 1 of 3**

Production Managers: ALICE WHITE
1st AD: CHERYL SMITH
Police: Eastwood Police Station ph (02) 9858 5944 **Hospital:** Ryde Hospital 1 Denistone Road Eastwood NSW 2212 ph (02) 9874 0199
Fire/Ambulance: 000

Production Office

Address Australian Film Television and Radio School: Corner Epping and Balaclava Roads, North Ryde, NSW

Phone +61.2.9805 6676 **Fax** +61.2.9887 1030 **Email** ropeburnproduction@gmail.com

Weather

Sunrise: 05:24:00 **Sunset:** 18:02:00
Forecast:
Partly Cloudy Min 14 Max 21

Call Times

Calls	Time	Location
Crew	08:00:00	AFTRS
Location	08:00:00	AFTRS

Shooting Schedule

Start of Day Notes ABSOLUTELY NO FOOD OR DRINK (EXCEPT FOR WATER BOTTLES) IN STUDIO

Sc: 9 **Pages:** 4/8 **Timing:** 00:00:25 Night / INT **Set:** DRESSING ROOM
Synposis: Charlie's not going to Europe with them

Character	Artist	PU	M/UP	WR	On Set
CHARLIE	Eloise Oxer	0630	0745	0715	0815
SIMONE	Amelia Best	0620	0715	0845	0815

Insert Row | Delete Row

Shoot Times: 09:00-11:15
Scene Notes: BLOCK-THROUGH 0815-0830 THEN LIGHT/COMPLETE M/UP AND WR 0830-0900

Sc: 2 **Pages:** 1 2/8 **Timing:** 00:01:07 Night / INT **Set:** DRESSING ROOM
Synposis: Simone and Charlie get it on but are interrupted.

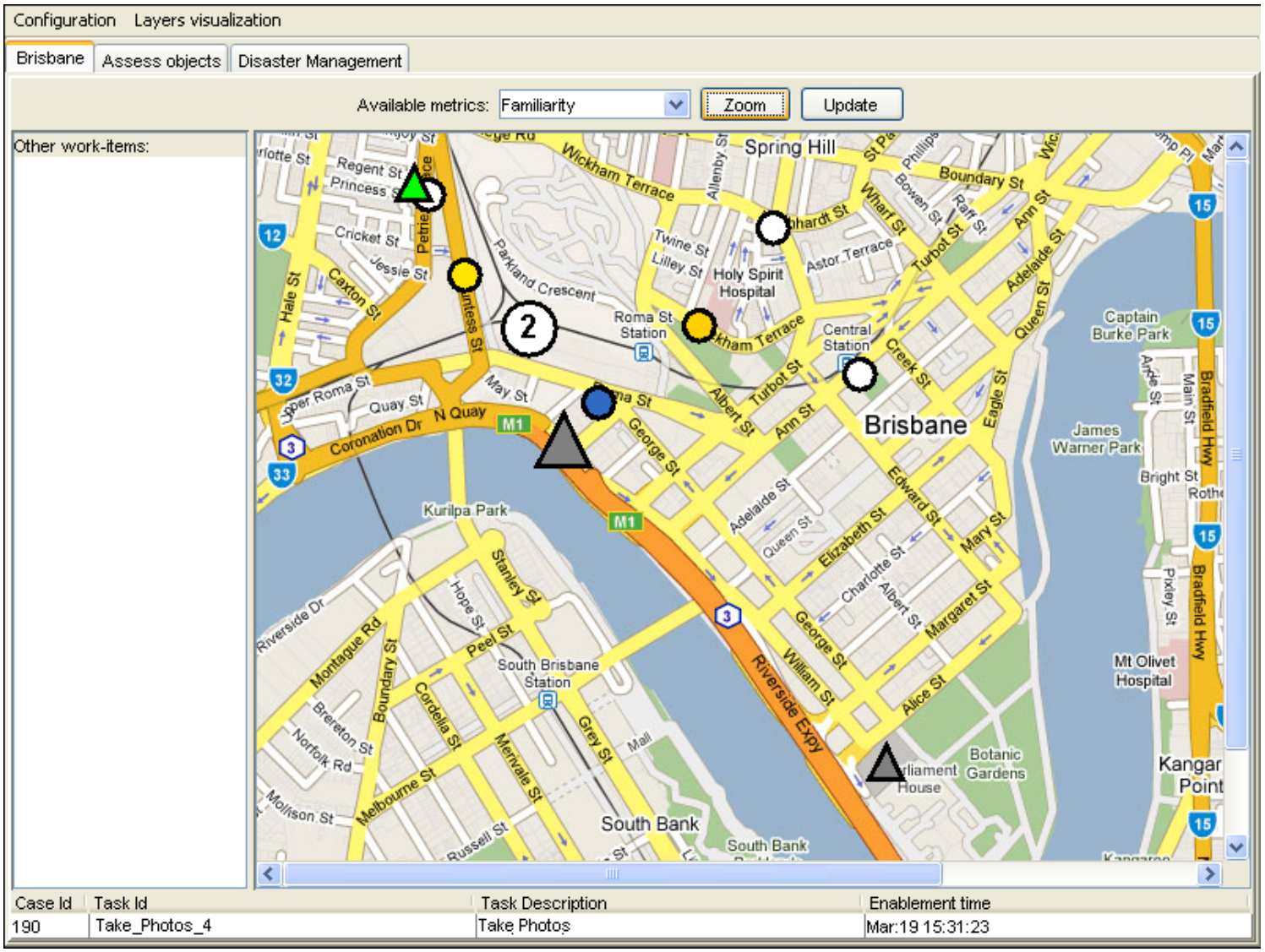
Character	Artist	PU	M/UP	WR	On Set
CHARLIE	Eloise Oxer	CLD	CLD	CLD	CLD

Partial Submission ◉ Final Submission ○

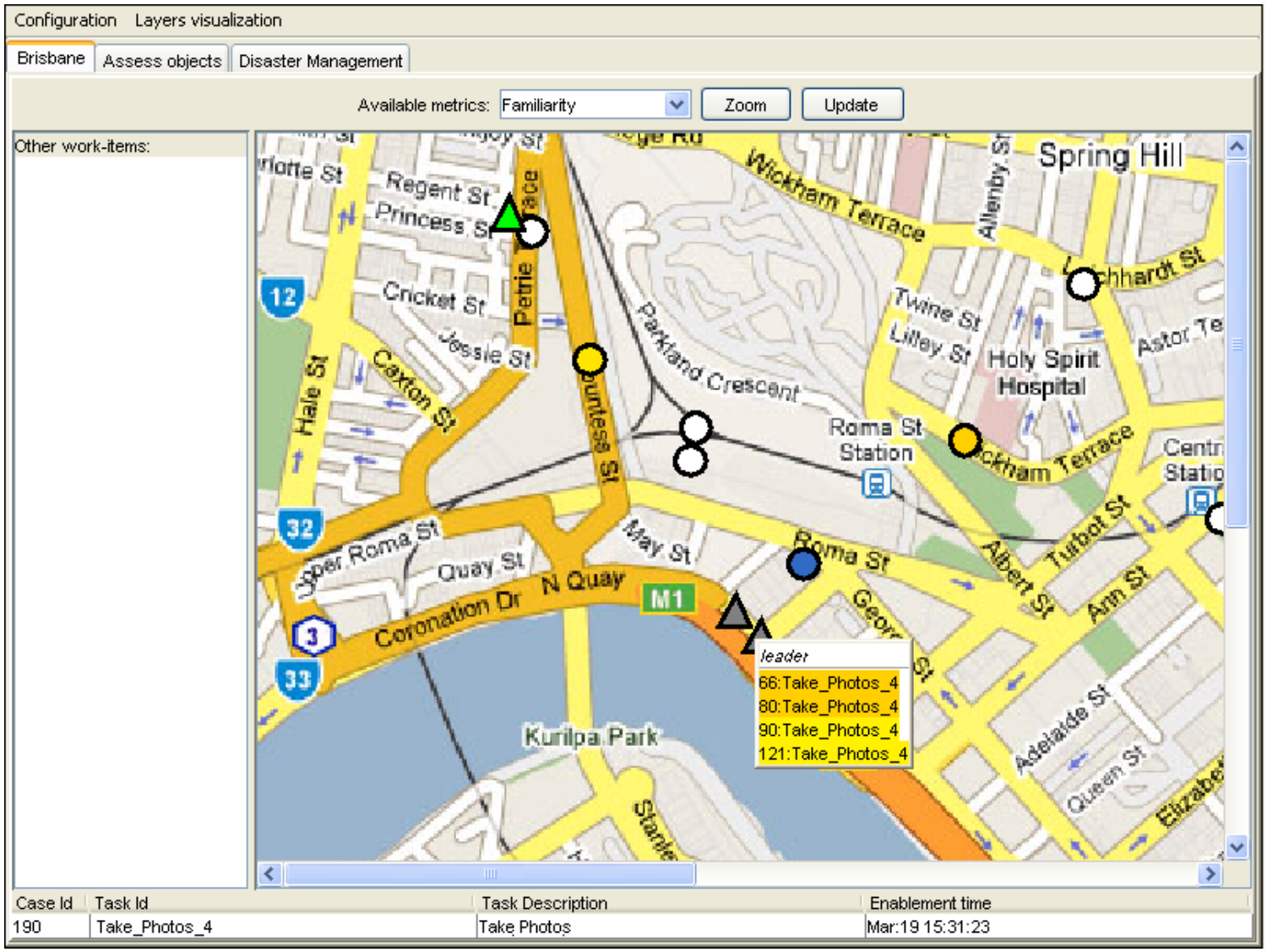
Print Preview | Print | Save | Submission | Upload

Work Lists: Default View

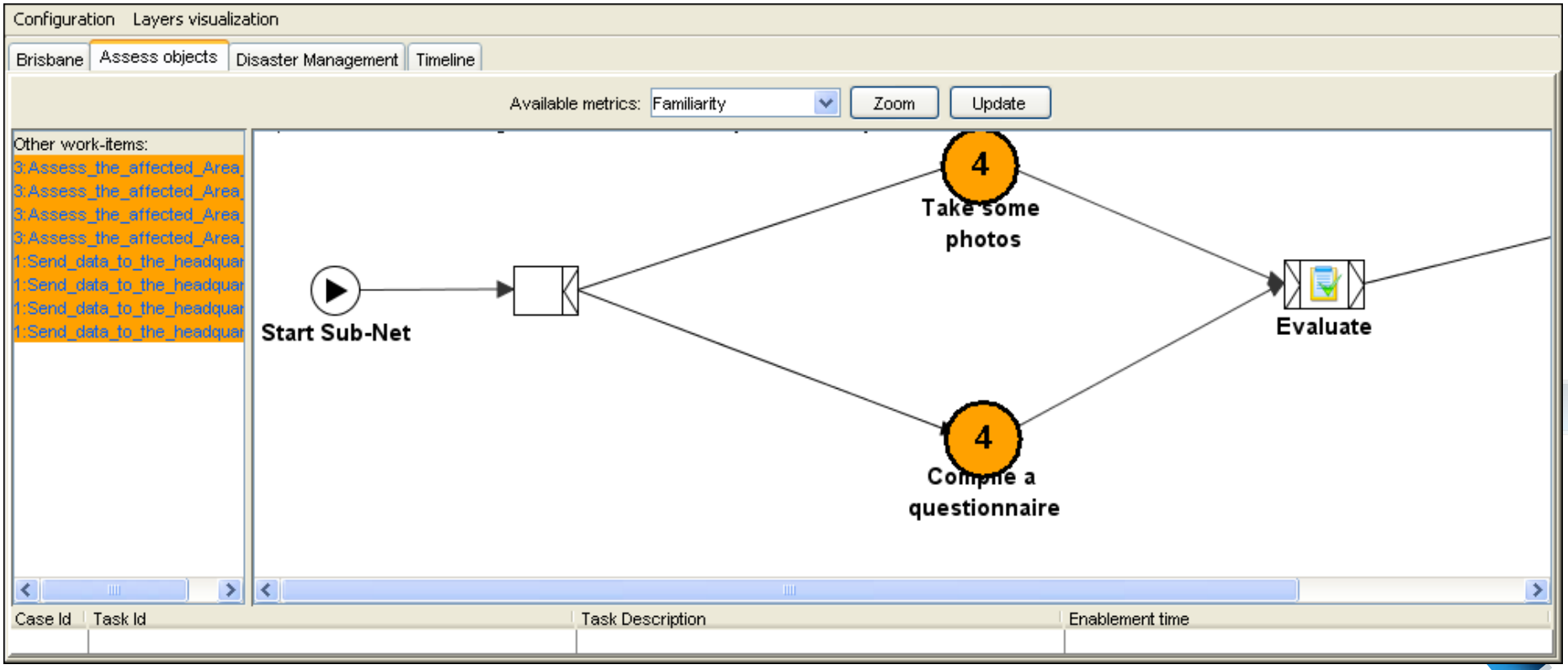
Work Lists: Alternative View I



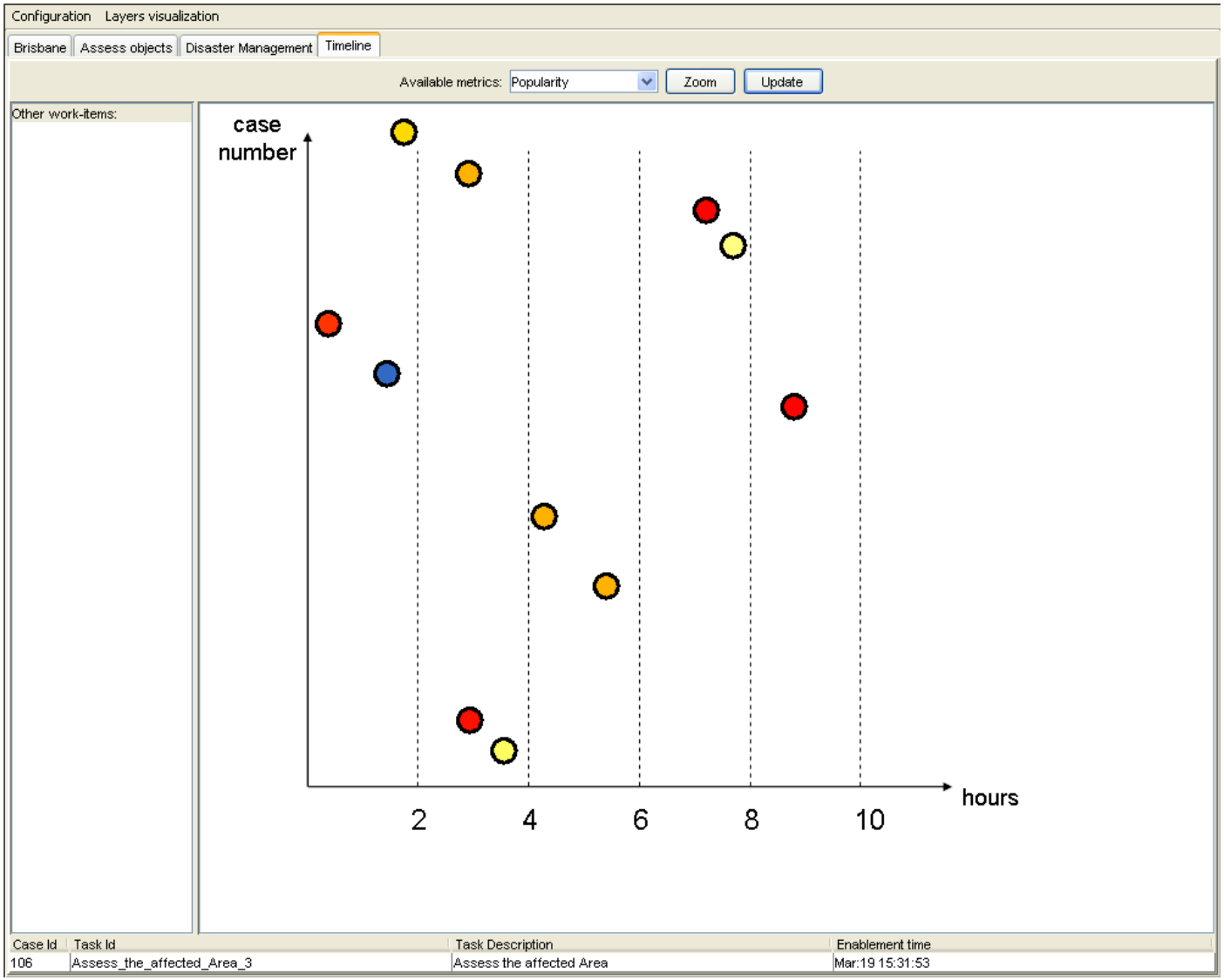
Work Lists: Alternative View I – C'ntd



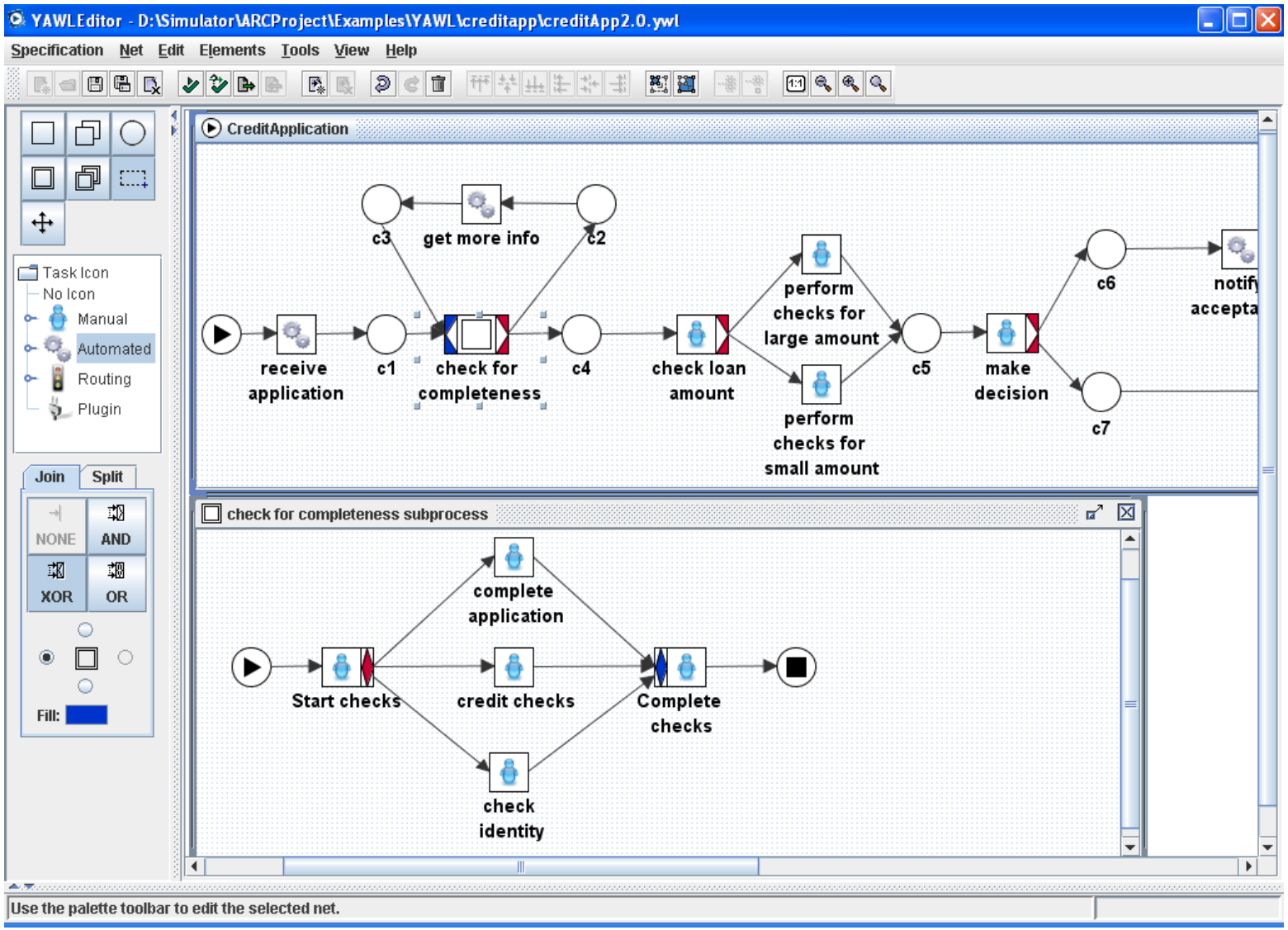
Work Lists: Alternative View II



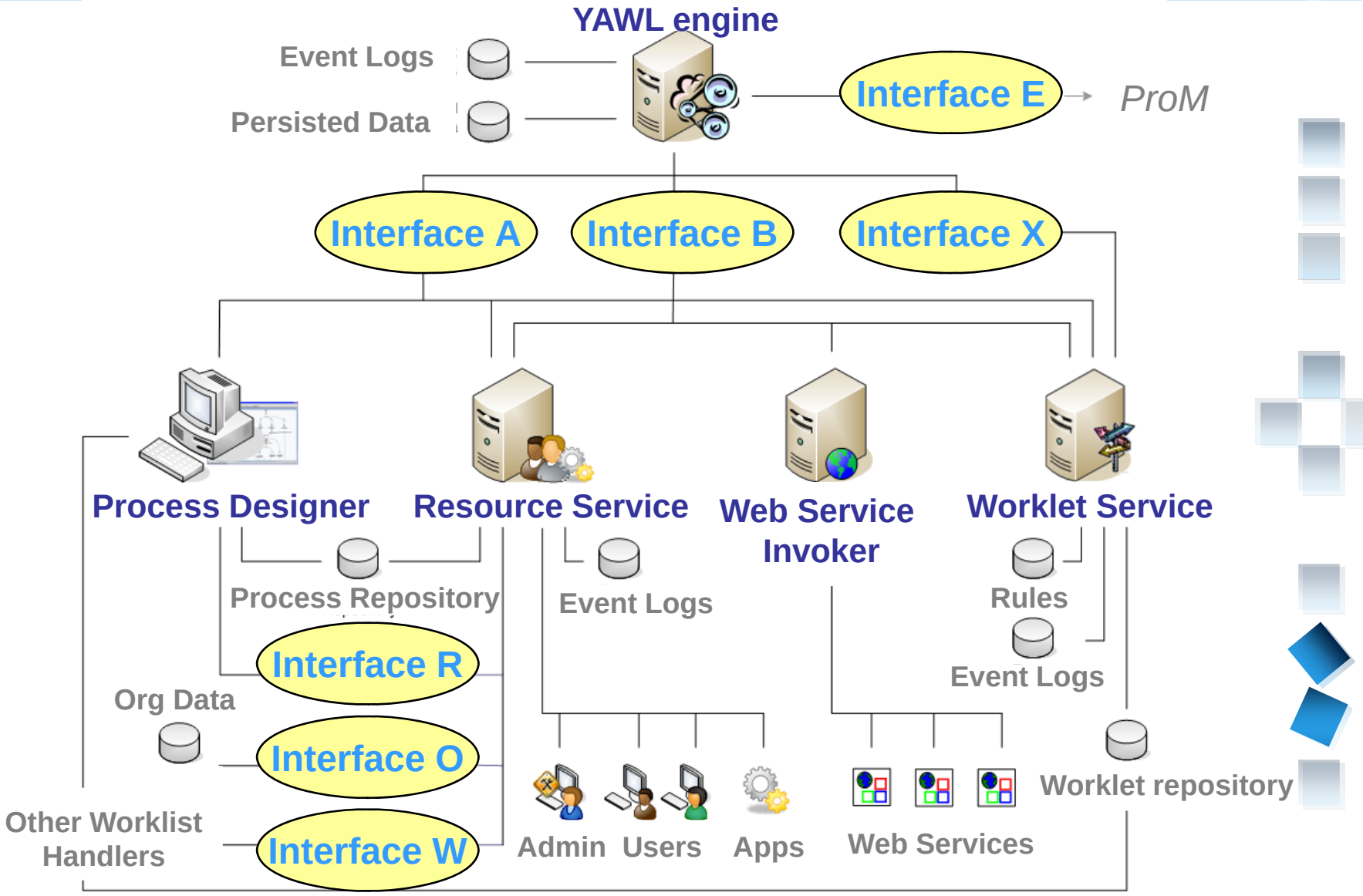
Work Lists: Alternative View III



Design: YAWL Editor



Service Oriented Architecture



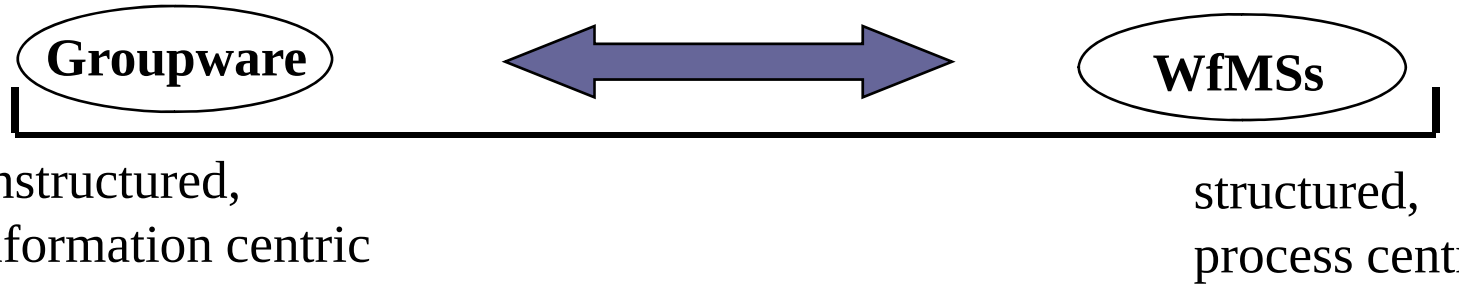
Dynamic Workflow and Exception Handling: Workflow Limitations

- Uptake of WfMS is limited to implementation of rigid and/or idealised workflow processes.
- Reason: WfMSs have difficulty dealing with process flexibility:
  - Keeping it simple means ignoring deviations
  - Capturing deviations means complex models
  - difficulty evolving with the work practices they model
  - difficulty representing “real-world” activities
  - limited exception handling capabilities

Limitations of the Paradigm

- The enforced rigidity of the "assembly line" paradigm means WfMSs cannot successfully deal with:
  - Exceptional events (i.e. deviations)
  - Developmental or unexpected change
  - Creative or ad-hoc processes

- Real work is complex and often unable to fit the paradigm (so how do people really work?)



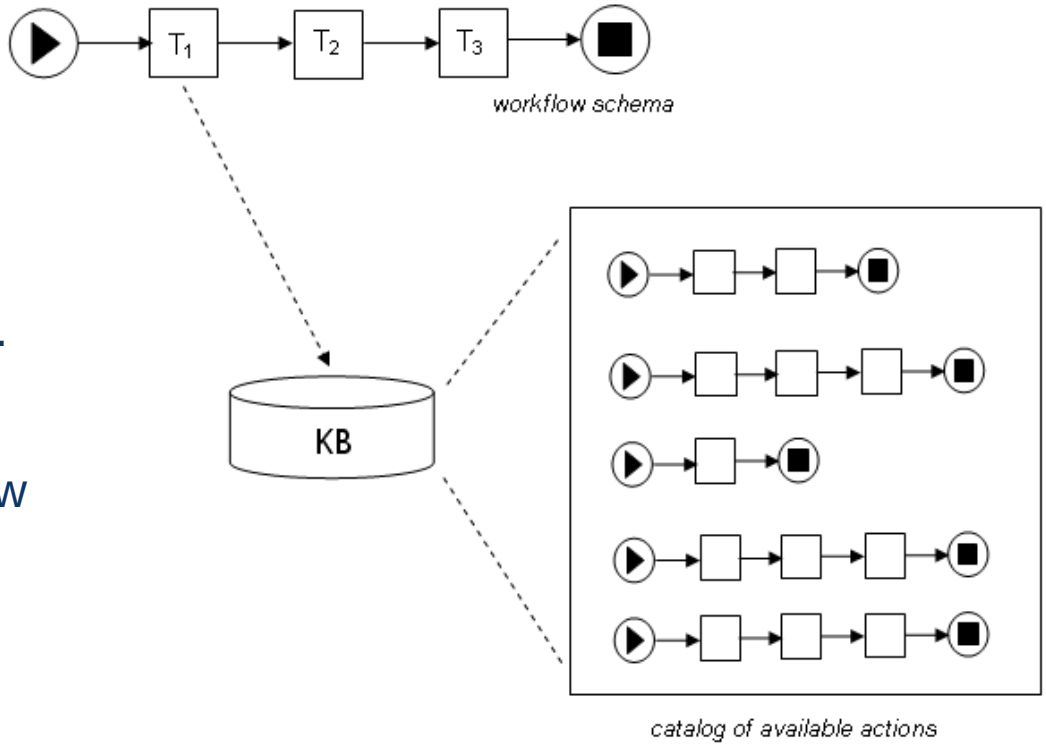
Activity Theory

- Activity Theory describes the frameworks associated with human activity.
- Originated in USSR in 1920's as part of the cultural-historical school of psychology.

- Incorporates Marxist ideas of human activity:
  - mediated by artefacts.
  - has strict division of labour.
  - transforms both nature and the worker.
  - uses "activity → action → operation" to delineate the individual's activity from the collective activity.

Worklets

- A worklet is a small, self-contained, complete workflow process which handles one specific action (task) in a larger, composite activity (process).
- Each task of a process instance may be linked to an extensible repertoire of worklets, one of which is contextually chosen at runtime to carry out the task.
- The repertoire is dynamically constructed as different approaches to completing a task are developed, derived from the context of each process instance.
- A sequence of worklets may be chained to form an entire workflow process.



Worklet Selection

- Each worklet is a representation of a particular situated action, the runtime selection of which relies on the relevant context of each case instance, derived from case and historical data.
- The worklet selection process is achieved through the use of modified *Ripple Down Rules* (RDR).
- An RDR Knowledge Base is a collection of simple rules conceptually arranged in a binary tree structure.
- Each rule node may have a false (‘or’) branch and/or a true (‘exception’) branch to another rule node
  - the root node has a default rule and can have a true branch only.
- If a rule is satisfied, the true branch is taken and the rule of the child node is evaluated
- If it is not satisfied, the false branch is taken and its child node rule is evaluated.

RDR Structure

- When a terminal node is reached:
  - if its rule is satisfied, then its conclusion is returned
  - if its rule is not satisfied, then the conclusion of the last rule satisfied on the path to that node is returned
- If the conclusion returned is found to be unsuitable for a particular case instance, a new rule may be formulated and added as a new leaf node.
  - In essence, each added rule is a refinement of its parent.

Simple RDR Example

Root

(p1)

(p4)

(p2)

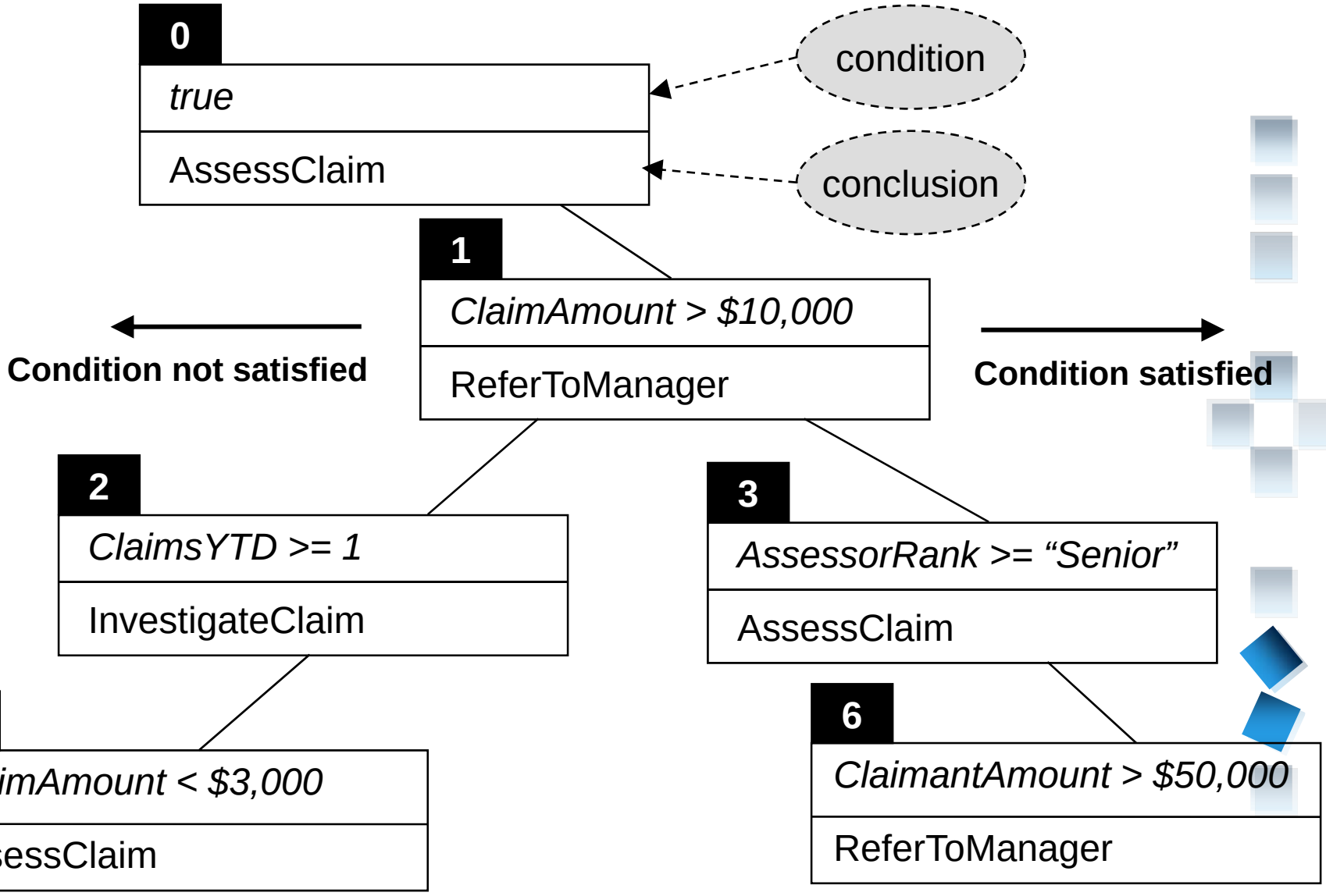
(p5)

(p6)

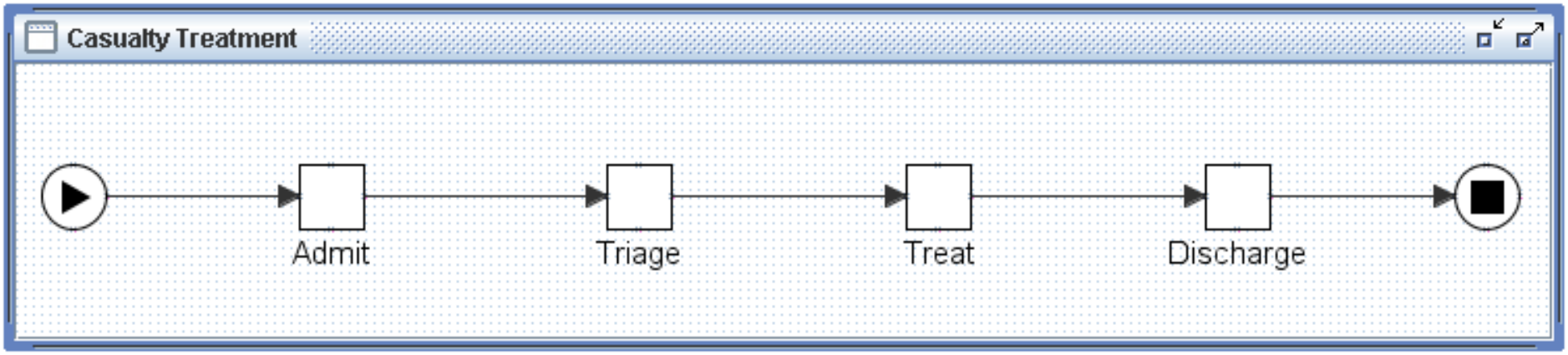
(p3)

(numbers refer to photo credits page)

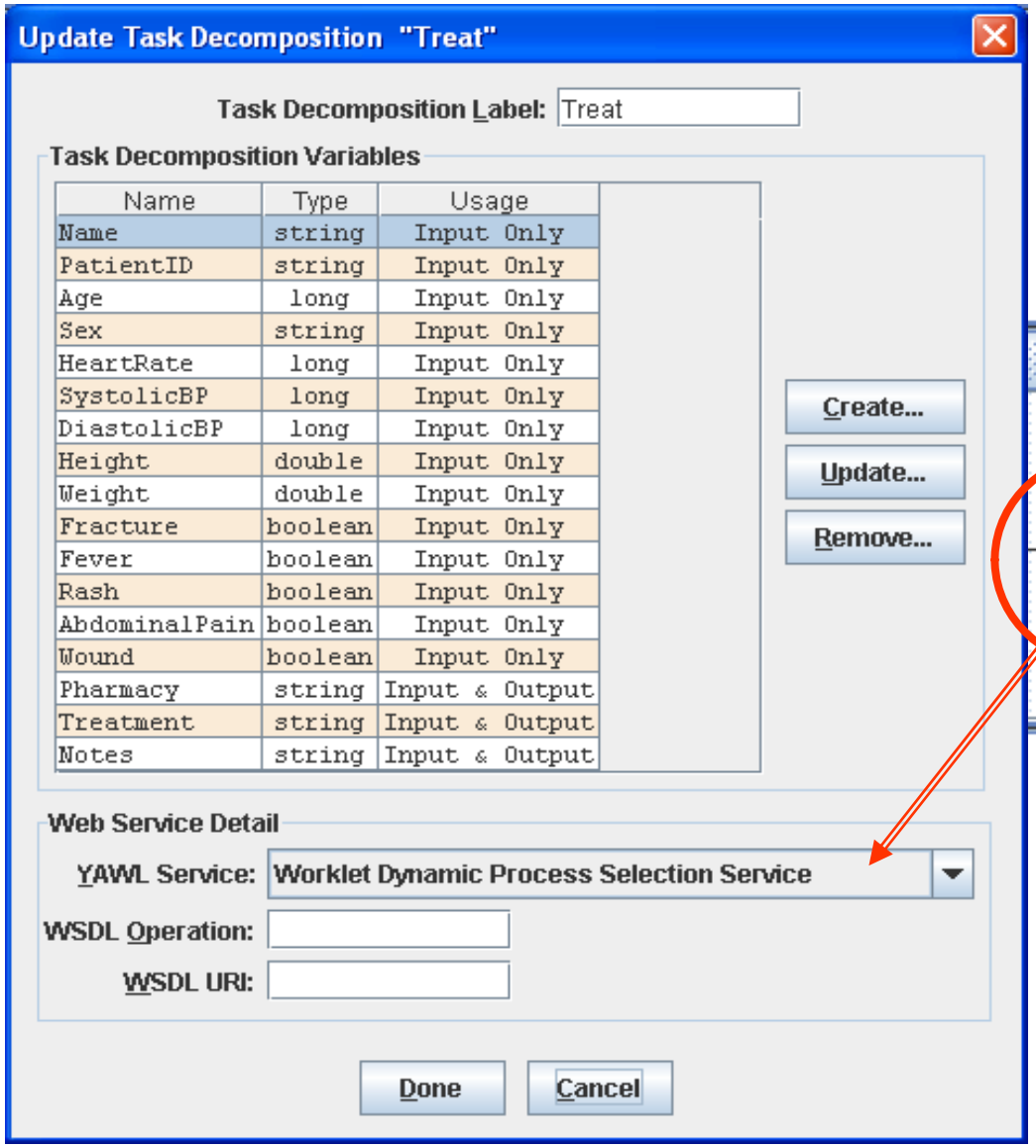
Sample RDR set for a *Assess Claim* task in Insurance Claim

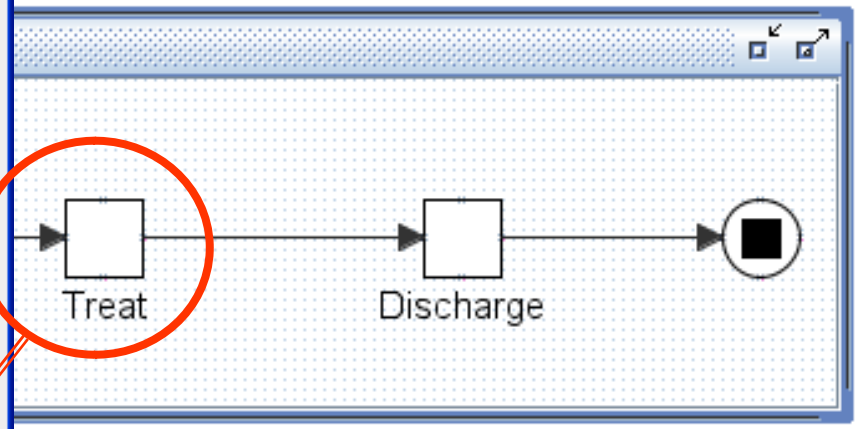


Worklets: A Simple Example

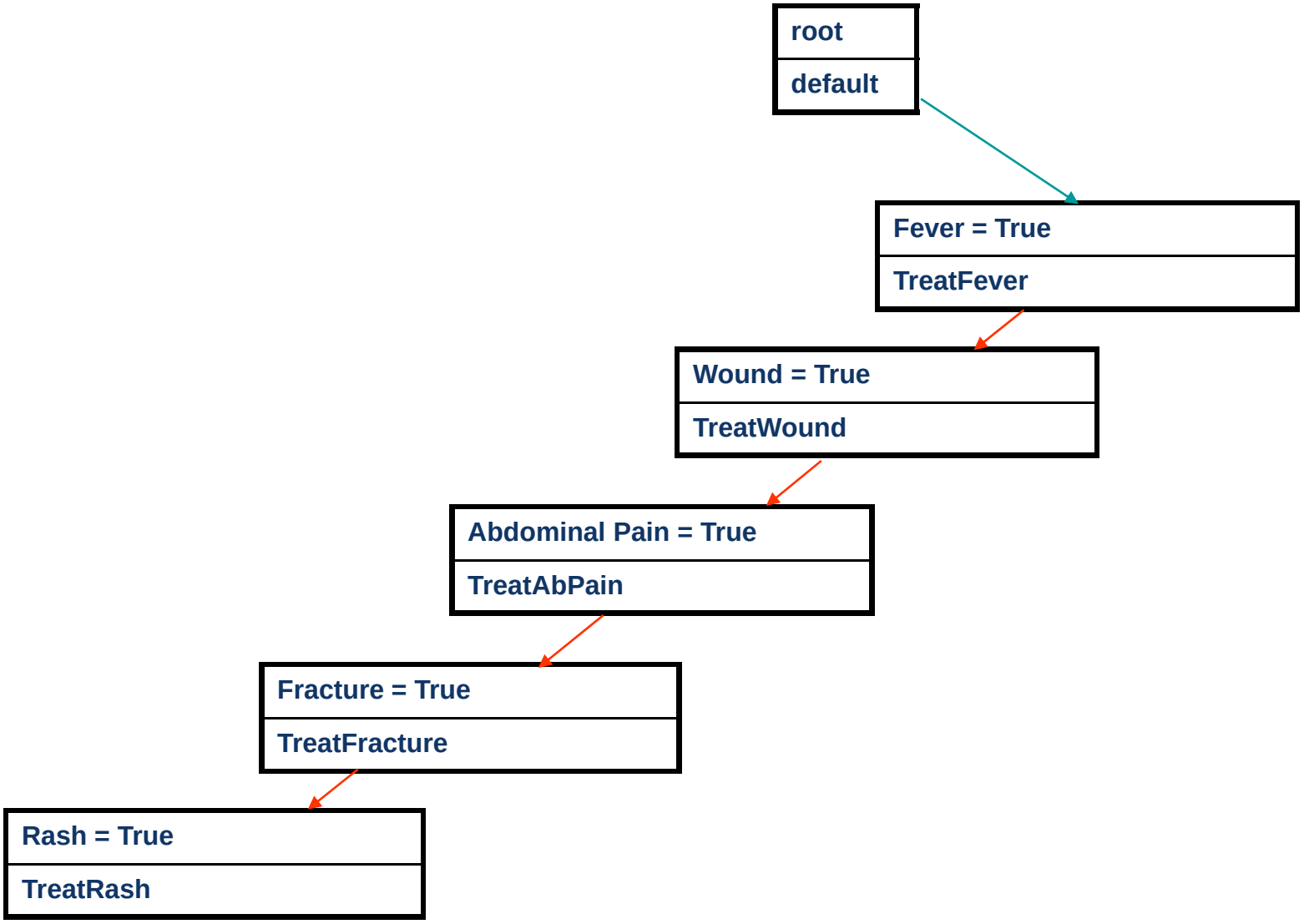


Worklets: A Simple Example

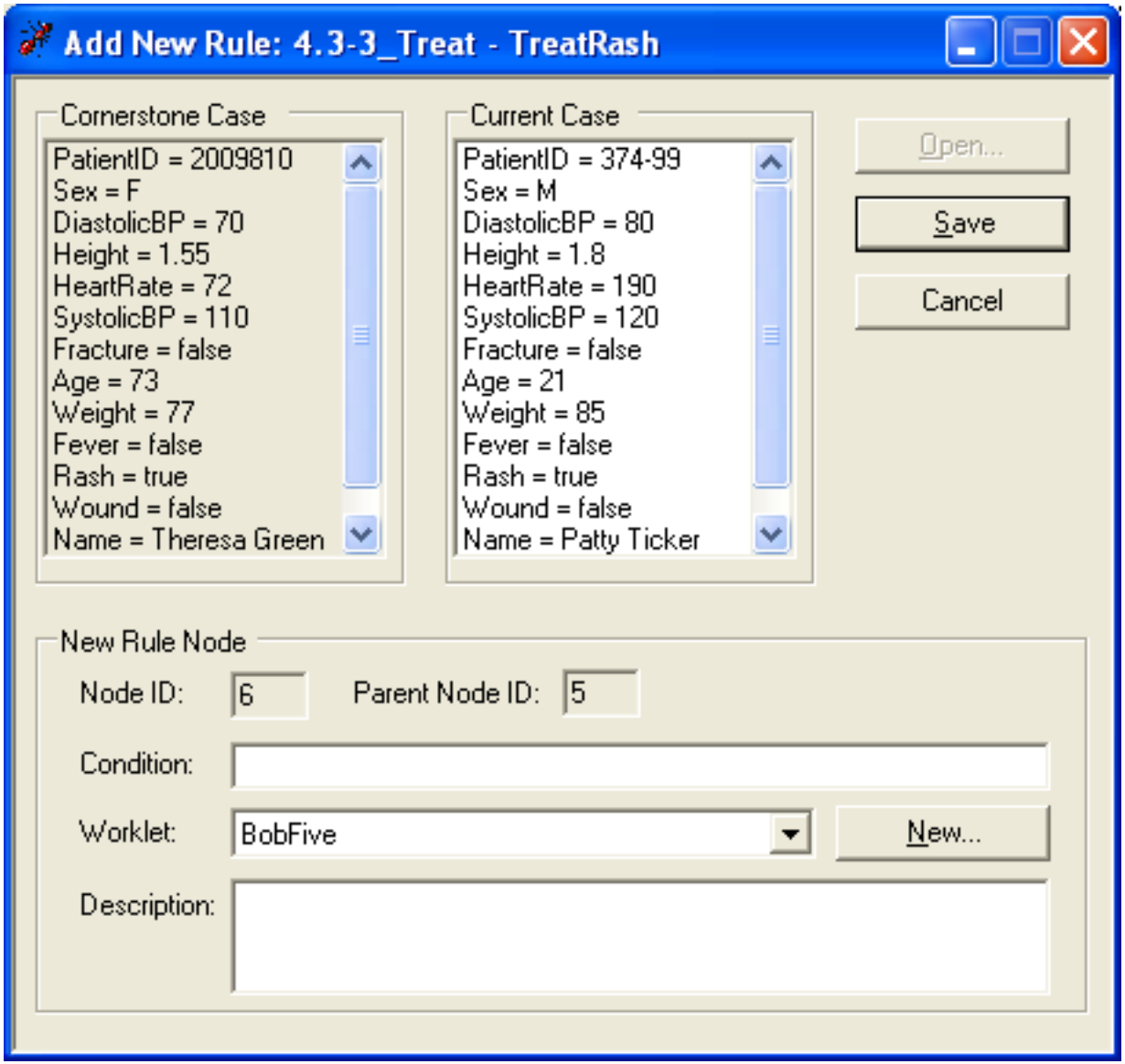




Example Rule Set



Adding a New Rule: Example



Worklet Exception Service

- The Worklet Service also provides support for exception handling.
- Each specification may have a separate RDR rule set defined for each type of possible process exception.
- When an exception occurs:
  - If a process has a rule set defined for that exception type, the worklet service will handle the exception by invoking an appropriately selected exception handling process
  - If there is no associated rule set, the exception is simply ignored.

Worklets & Exceptions

- The Worklet Service uses the same rules framework for selecting exception handlers as it does for worklet substitutions
- For exceptions, a discrete exception handling sequence is selected instead of a single worklet
  - The exception sequence may contain a worklet to run as a compensatory process
- Exception Handling sequences can be defined 'on-the-fly' for unexpected exceptions, which will then be dynamically incorporated into an instance of that workflow process whenever needed.
  - Worklets to handle exceptions are constructed in *exactly the same way* as those for standard processes.
- Importantly, the method used to handle an exception is captured by the system, and so a history is recorded for future instantiations.
  - In this way, the process model-set undergoes a dynamic natural evolution.

Exception Factors

- The Worklet Service can take these **actions** against these **targets** for these **events**

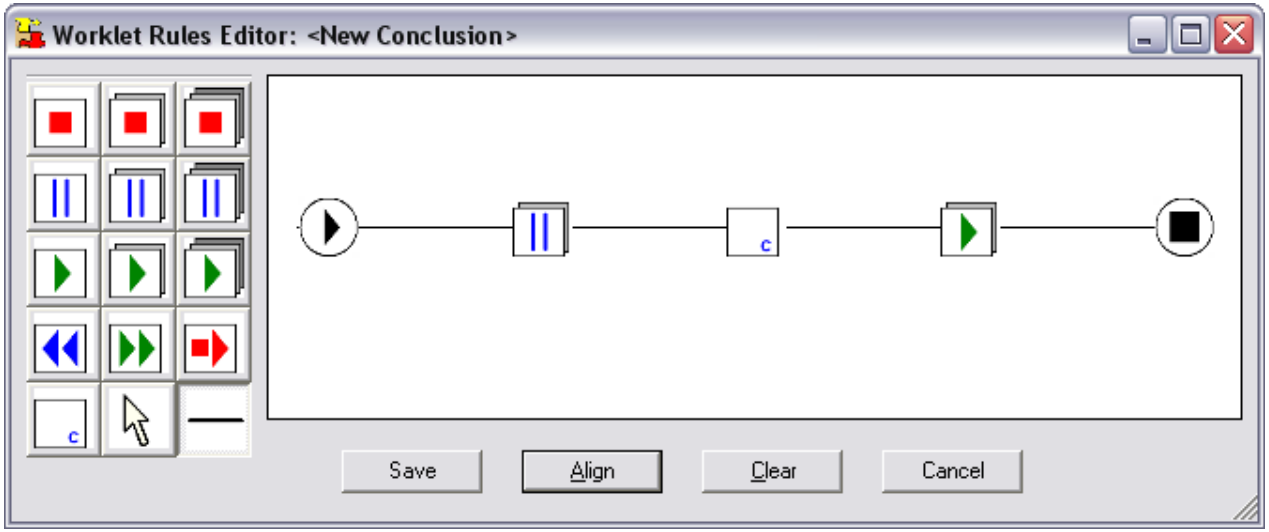
Events
Constraints (pre & post)
Constraint violation
Timeout
Unavailable resource
Task abort
External Triggers

Actions
Suspend
Continue
Restart
Complete
Fail
Remove
Compensate

Targets
Task
Case
All Cases
Ancestors

Exception Handlers

- Exception handling sequences are defined using the 'exception handling primitives'
- A specification can have a repertoire of handlers for each exception type - the appropriate handler will be chosen contextually at runtime
  - For item-level exceptions, each item in the specification has its own repertoire of handlers
- A sequence can contain any number of compensation primitives, each associated with a worklet.
  - Worklets can run in parallel with the parent task, or while the parent is suspended



Worklet Advantages

- Keeps the parent model clean and simple.
- Promotes the reuse of sub-processes in different models.
- Allows standard processes to be used as exception handling processes, and vice versa.
- An extensible repertoire of actions can be compiled that can be invoked as required during design and/or runtime.
- A system may build a history of executions, providing for a learning system that can take the appropriate actions for certain contexts automatically.

Worklet Advantages

- A fully encapsulated sub-process allows for easier verification and modification.
- Allows a model to evolve without the need to stop and modify the design of the whole model when an exception occurs.
- By de-coupling the monolithic process model, models can be built that vary from loosely to tightly defined and so supports late binding of processes.
- Allows a model to be considered from many levels of granularity.

Verification

- Design time analysis of YAWL specifications
- Important due to long-lived nature of workflows
- Highly complex (both algorithmically and computationally)
- Almost never supported by commercial or open source systems systems
- YAWL environment supports approaches through:
  - Transition Invariants
  - Reset nets

Verification (reset nets)

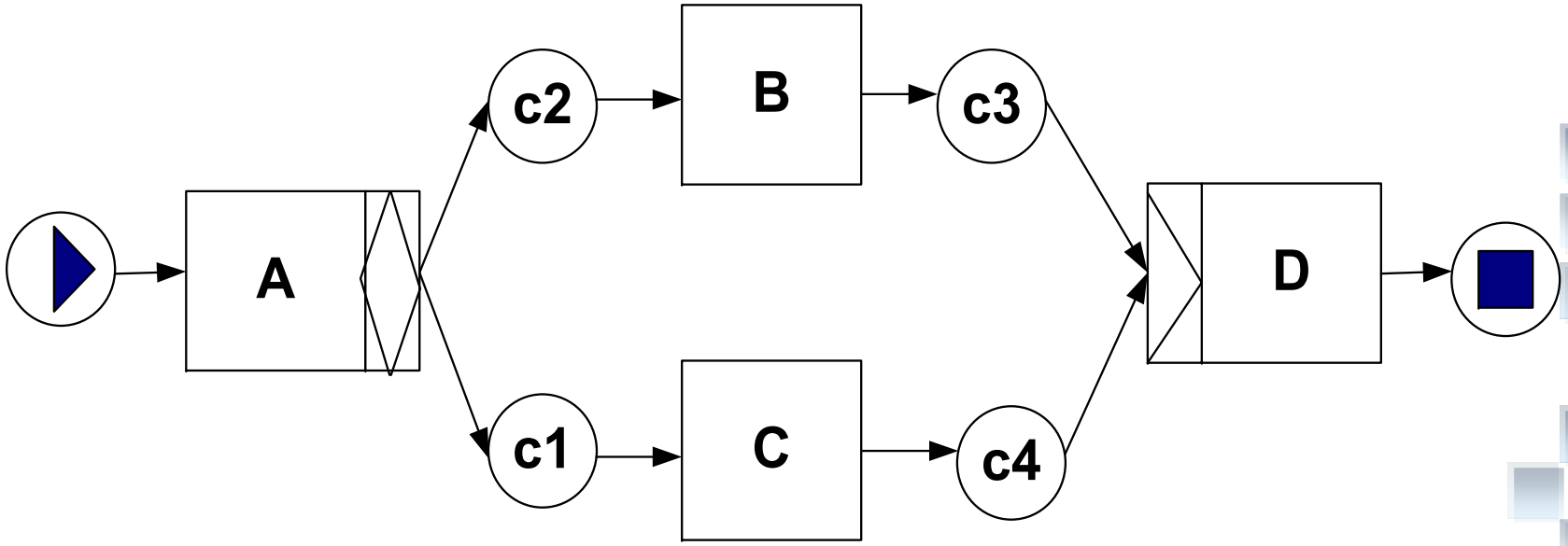
- Four structural properties
  - Soundness
  - Weak soundness
  - Irreducible cancellation regions
  - Immutable OR-joins

- Different approaches (coverability & reachability)
  - YAWL nets without OR-joins - reset net semantics
  - YAWL nets with OR-joins - YAWL semantics

Soundness vs. Weak soundness

- Option to complete
  - A process when started can always complete
  - A process when started can complete in *some* cases (Weak option to complete)
- Proper completion
  - it should not have any other tasks still running for that process when the process ends
- No dead transitions
  - the process should not contain tasks that will never be executed

Weak soundness example

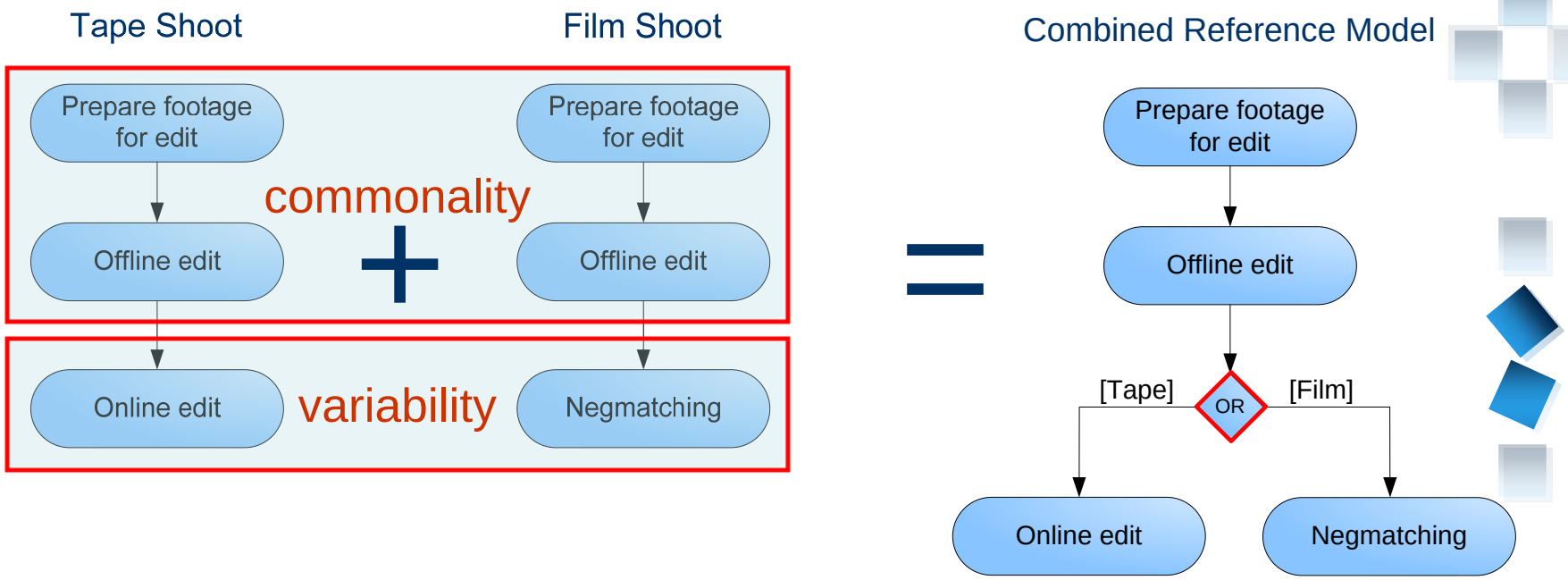


- i -> c1 -> c4 -> deadlock
- i -> c2 -> c3 -> deadlock
- i -> c1+c2 -> c1+c3 -> c3+c4 -> o
- i -> c1+c2 -> c2+c4 -> c3+c4 -> o
- Weak option to complete

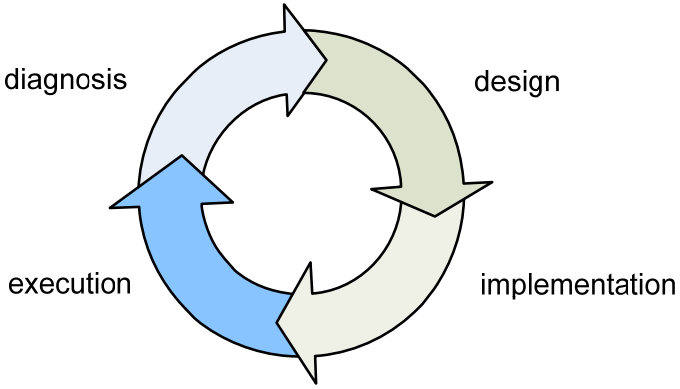
Reference Process Model

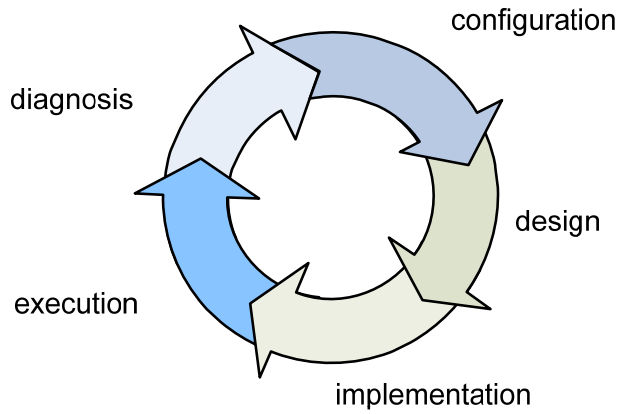
Repository of business process models capturing practices in a domain, which can be configured in a specific setting leading to individualized process models:

- increased reuse of proven practices,
- reduced modeling effort.

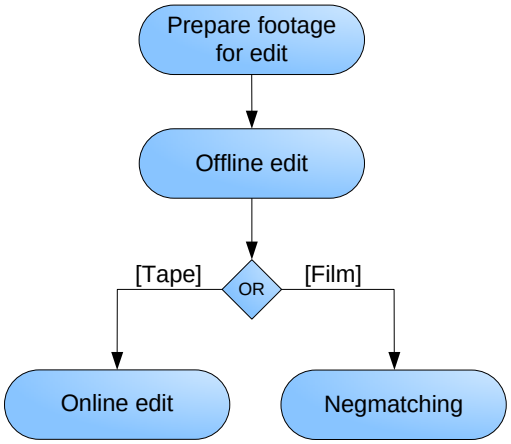


Reference Process Model (C'ntd)

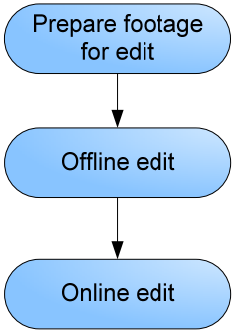




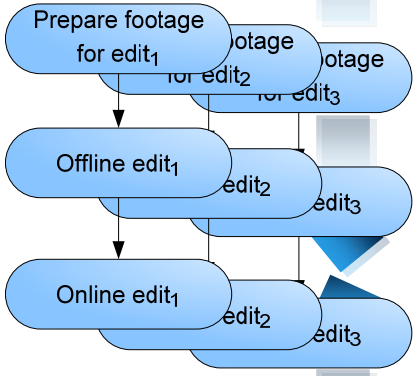
Combined Reference Model



Derived Model (Tape Shoot)



Derived Instances (Tape Shoot)



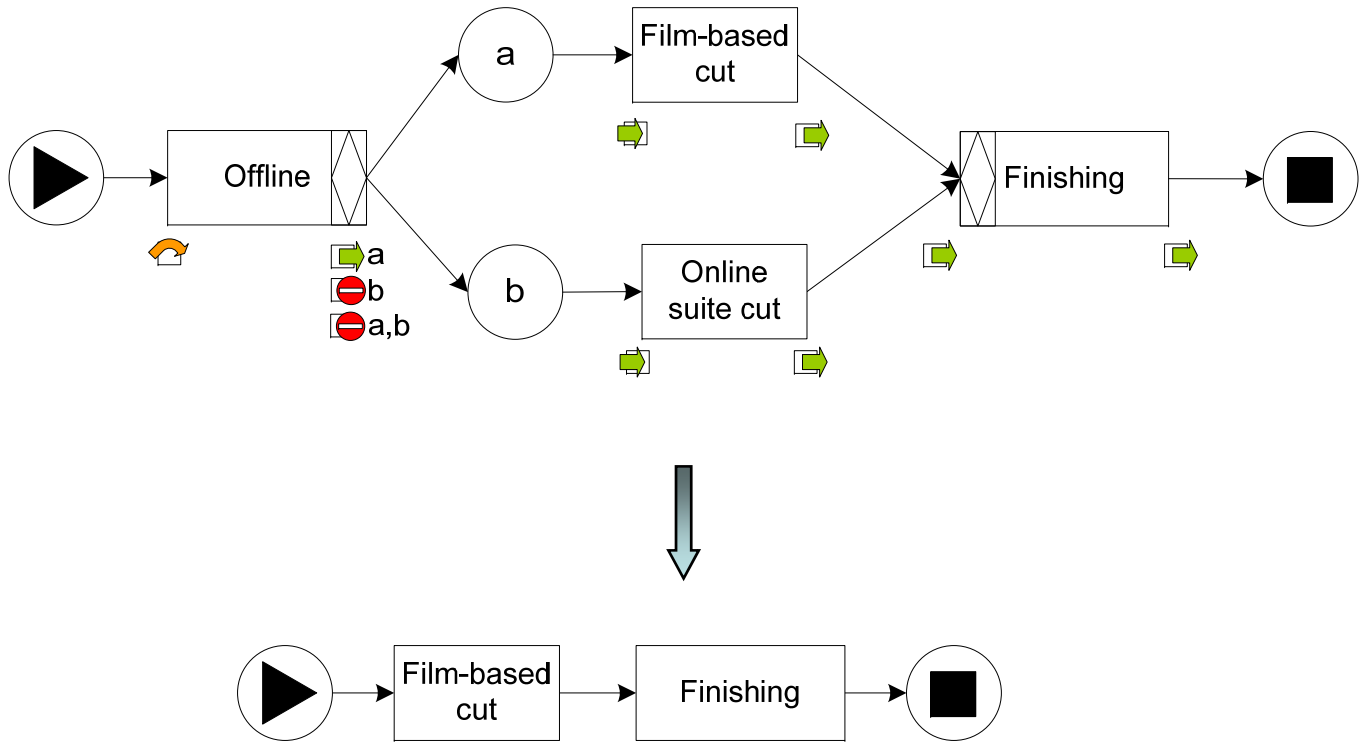
creation **configuration** **design** **implementation** **execution**

Foundation for Configurable Process Models

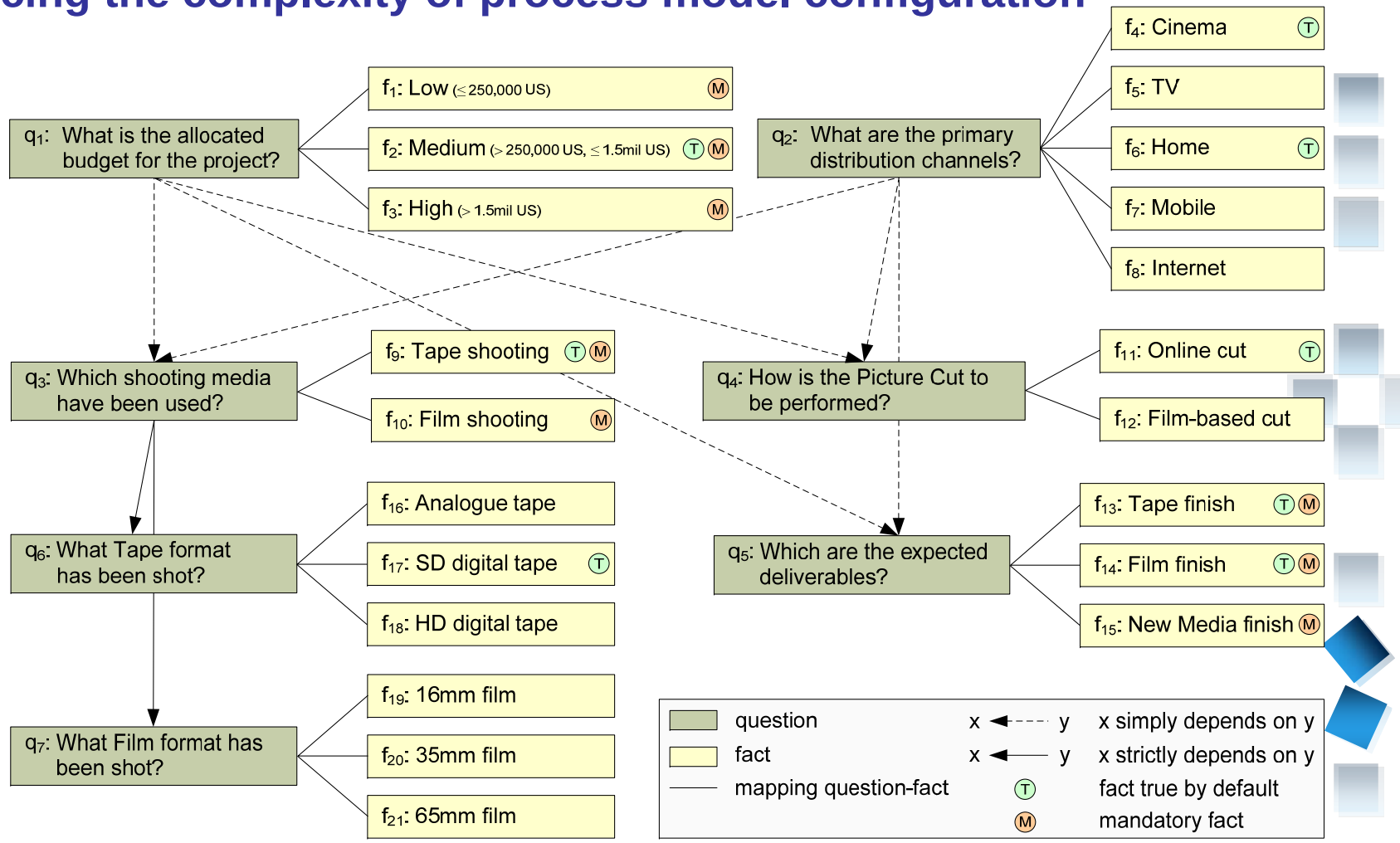
- Configuration relies on two operations: ***hiding*** and ***blocking***, derived from concepts of inheritance of dynamic behavior [van der Aalst, Basten, 2002]

- Variation points divide into inflow and outflow ***ports***:
  - inflow ports can be *activated* (), *blocked* () or *hidden* (),
  - outflow ports can only be *activated* () or *blocked* ().

The approach has been applied to YAWL: "configurable-YAWL" (C-YAWL)



Reducing the complexity of process model configuration



Case Study: YAWL4Film

- Background
  - Project of “Applying Business Process Management (BPM) to the Creative Industries”
  - Part of the ARC Centre of Excellence for Creative Industries and Innovation (CCi)
- Collaboration
  - QUT’s BPM Group and the Australian Film, Television and Radio School (AFTRS)
  - Porchlight Film & TV Production

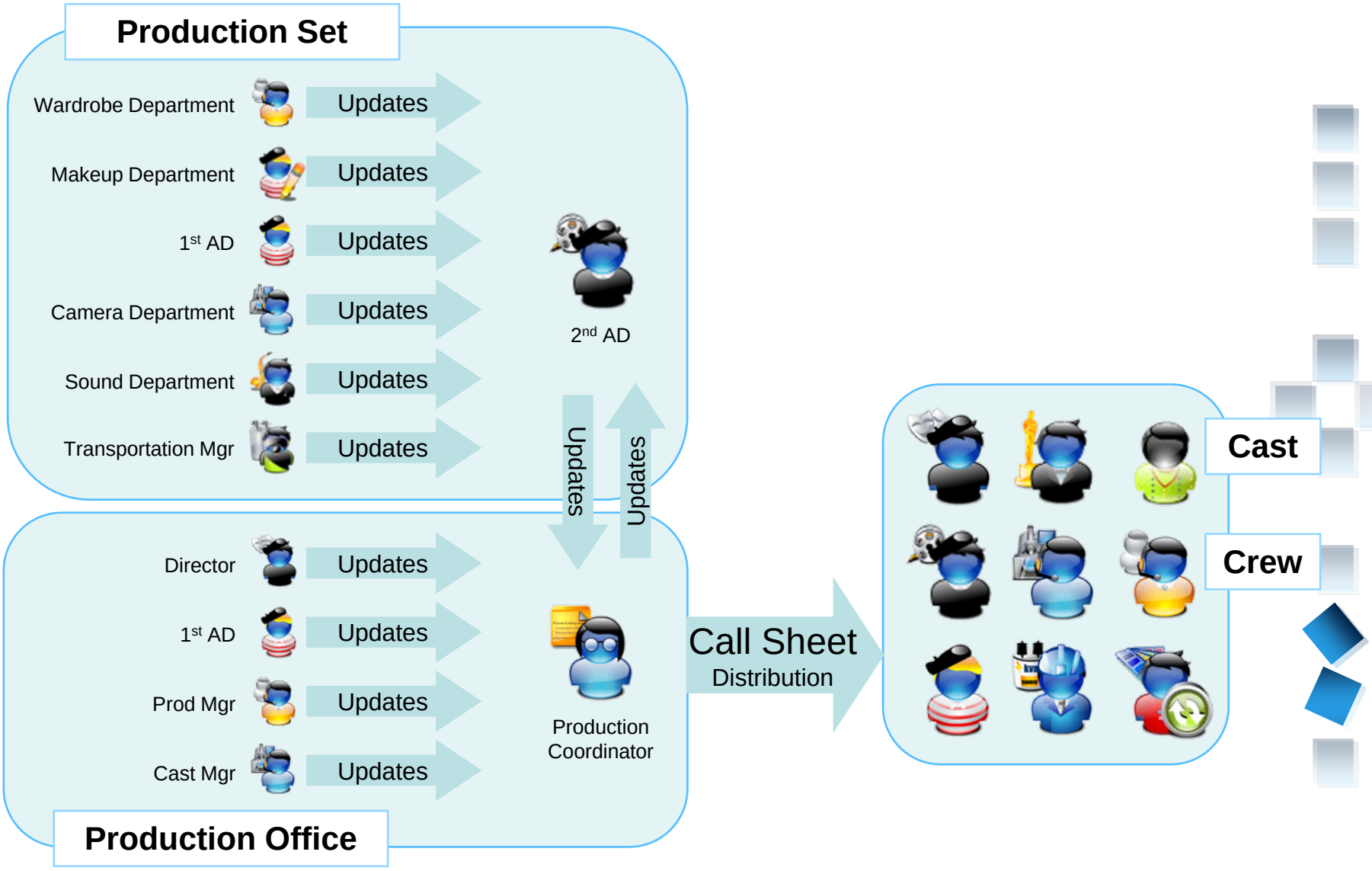
Applying BPM to Screen Business

- Business Process Management (BPM)
  - Well-established approach to achieving cost and time savings
  - Usually not applied in smaller companies
- Screen Business
  - All creative and business-related aspects of processes
  - Preparation, pre-production, production, and post-production
- Bring process innovation to film production
  - Film production process automation
  - YAWL4Film: Automating film production processes using YAWL
- *Innovation Barriers*

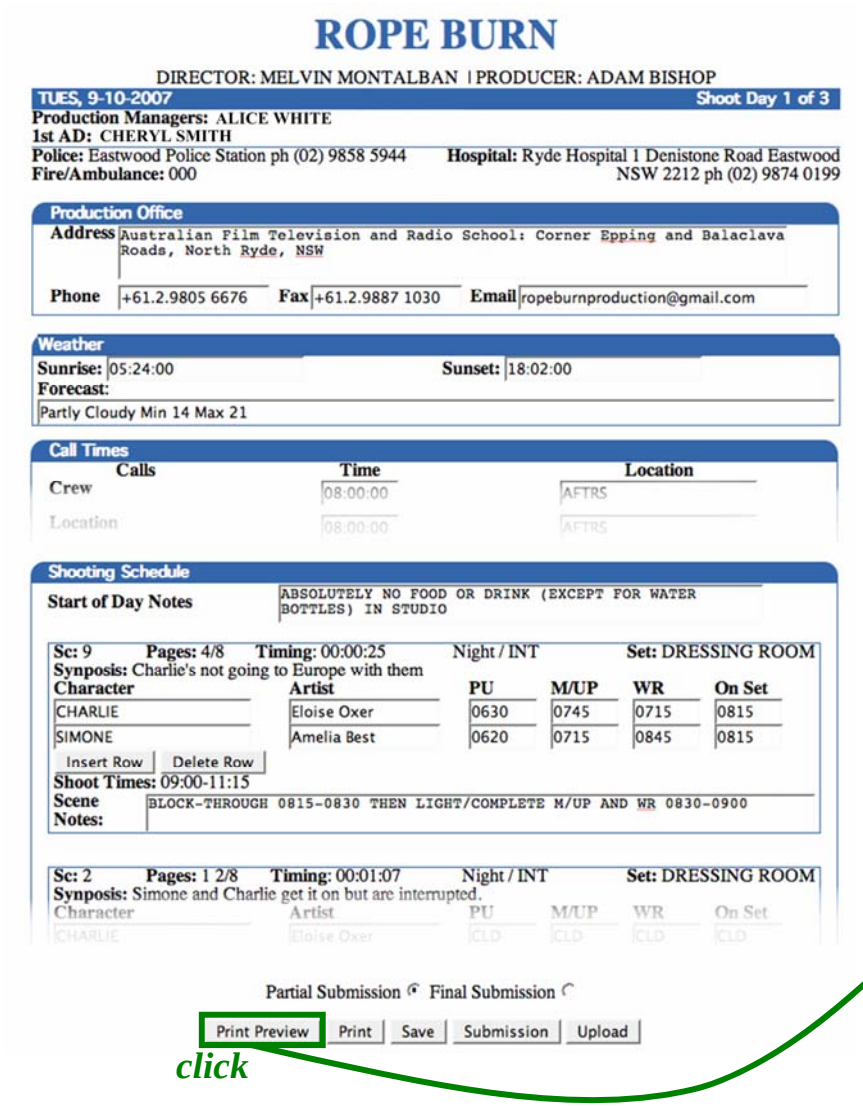
Automating Film Production Processes

- Daily Shooting Procedures
  - Paper based, manual
  - Time-consuming, tedious and error-prone
  - May delay progress
- Goals & Benefits
  - To optimize the process execution
  - To automate document processing and report generation
  - To increase efficiency without sacrificing creativity
  - To reduce the cost of film production
  - To increase the quality of the final product

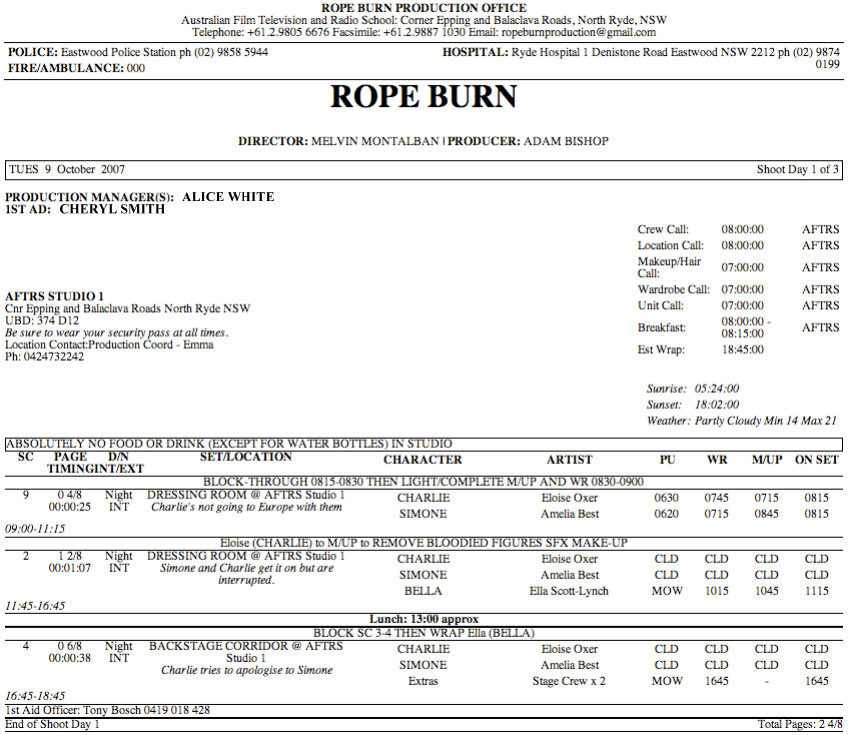
Traditional Call Sheet Process



YAWL4Film – A Glimpse



click



ROPE BURN PRODUCTION OFFICE
Australian Film Television and Radio School: Corner Epping and Balaclava Roads, North Ryde, NSW
Telephone: +61.2.9805 6676 Facsimile: +61.2.9887 1030 Email: ropeburnproduction@gmail.com

POLICE: Eastwood Police Station ph (02) 9858 5944
FIRE/AMBULANCE: 000
HOSPITAL: Ryde Hospital 1 Denistone Road Eastwood NSW 2212 ph (02) 9874 0199

ROPE BURN

DIRECTOR: MELVIN MONTALBAN | **PRODUCER:** ADAM BISHOP

TUES 9 October 2007 — Shoot Day 1 of 3

PRODUCTION MANAGER(S): ALICE WHITE
1ST AD: CHERYL SMITH

Crew Call:	08:00:00	AFTRS
Location Call:	08:00:00	AFTRS
Makeup/Hair Call:	07:00:00	AFTRS
Wardrobe Call:	07:00:00	AFTRS
Unit Call:	07:00:00	AFTRS
Breakfast:	08:00:00 - 08:15:00	AFTRS
Est Wrap:	18:45:00	

AFTRS STUDIO 1
Cnr Epping and Balaclava Roads North Ryde NSW
UBD: 374 D12
Be sure to wear your security pass at all times.
Location Contact:Production Coord - Emma
Ph: 0424732242

Sunrise: 05:24:00
Sunset: 18:02:00
Weather: Partly Cloudy Min 14 Max 21

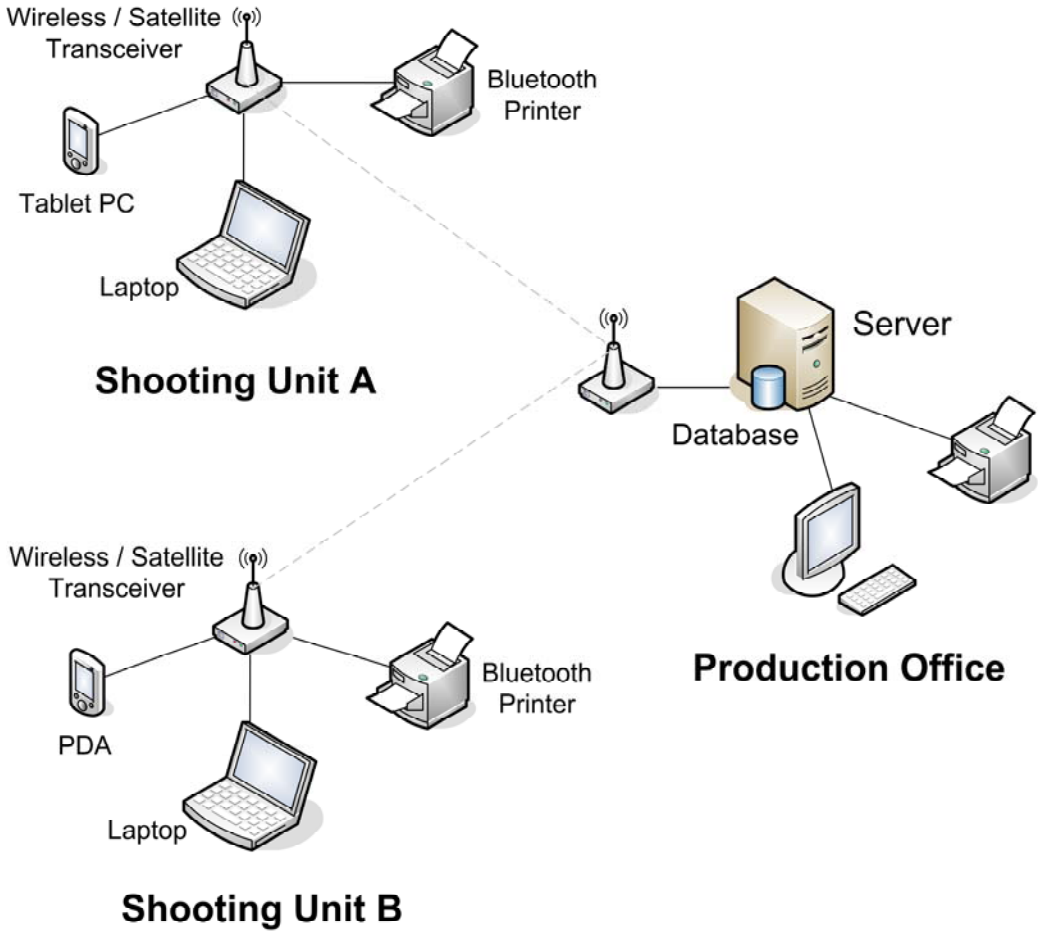
ABSOLUTELY NO FOOD OR DRINK (EXCEPT FOR WATER BOTTLES) IN STUDIO

SC	PAGE TIMING	D/N INT/EXT	SET/LOCATION	CHARACTER	ARTIST	PU	WR	M/UP	ON SET
			BLOCK-THROUGH 0815-0830 THEN LIGHT/COMPLETE M/UP AND WR 0830-0900						
9	0 4/8 00:00:25	Night INT	DRESSING ROOM @ AFTRS Studio 1 *Charlie's not going to Europe with them*	CHARLIE	Eloise Oxer	0630	0745	0715	0815
				SIMONE	Amelia Best	0620	0715	0845	0815
09:00-11:15									
			Eloise (CHARLIE) to M/UP to REMOVE BLOODIED FIGURES SFX MAKE-UP						
2	1 2/8 00:01:07	Night INT	DRESSING ROOM @ AFTRS Studio 1 *Simone and Charlie get it on but are interrupted.*	CHARLIE	Eloise Oxer	CLD	CLD	CLD	CLD
				SIMONE	Amelia Best	CLD	CLD	CLD	CLD
				BELLA	Ella Scott-Lynch	MOW	1015	1045	1115
11:45-16:45									
			Lunch: 13:00 approx						
			BLOCK SC 3-4 THEN WRAP Ella (BELLA)						
4	0 6/8 00:00:38	Night INT	BACKSTAGE CORRIDOR @ AFTRS Studio 1 *Charlie tries to apologise to Simone*	CHARLIE	Eloise Oxer	CLD	CLD	CLD	CLD
				SIMONE	Amelia Best	CLD	CLD	CLD	CLD
				Extras	Stage Crew x 2	MOW	1645	-	1645
16:45-18:45									

1st Aid Officer: Tony Bosch 0419 018 428
End of Shoot Day 1 — Total Pages: 2 4/8

A print-ready copy resembles the hard copy format used in practice

YAWL4Film – Gears



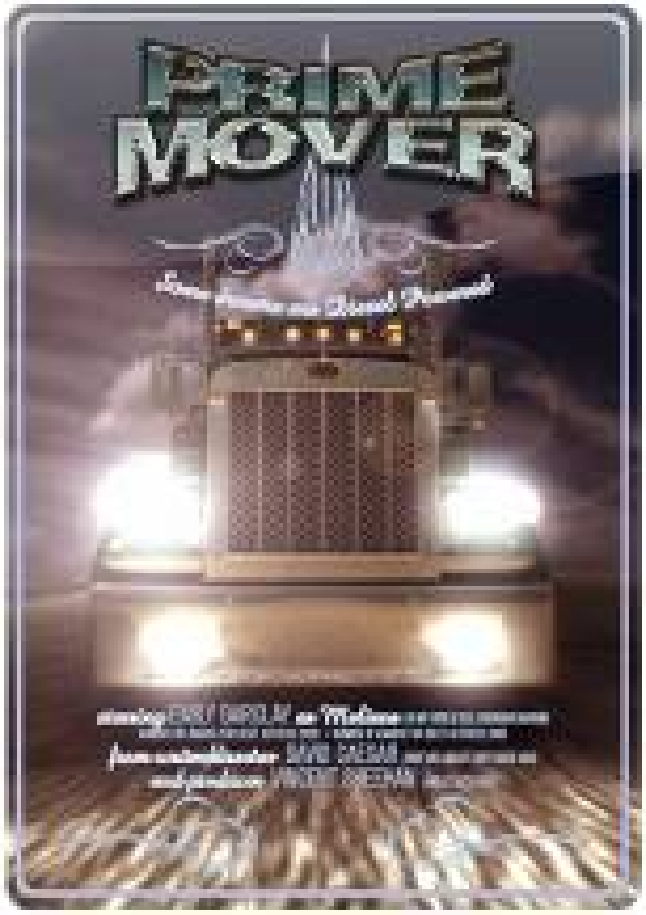
YAWL4Film – Deployment

- YAWL4Film was deployed on two film productions at the AFTRS in October 2007
  - Project 1 – “Rope Burn”: a three-day shoot in studio with 30 onset crew, 6 cast and 6 production office crew
  - Project 2 – “Family Man”: a three-day shoot on location and in studio with 35 crew, 5 cast and 4 production office crew
- YAWL4Film shadowed the process of call sheet generation, DPR generation, and cast and crew database update for both productions

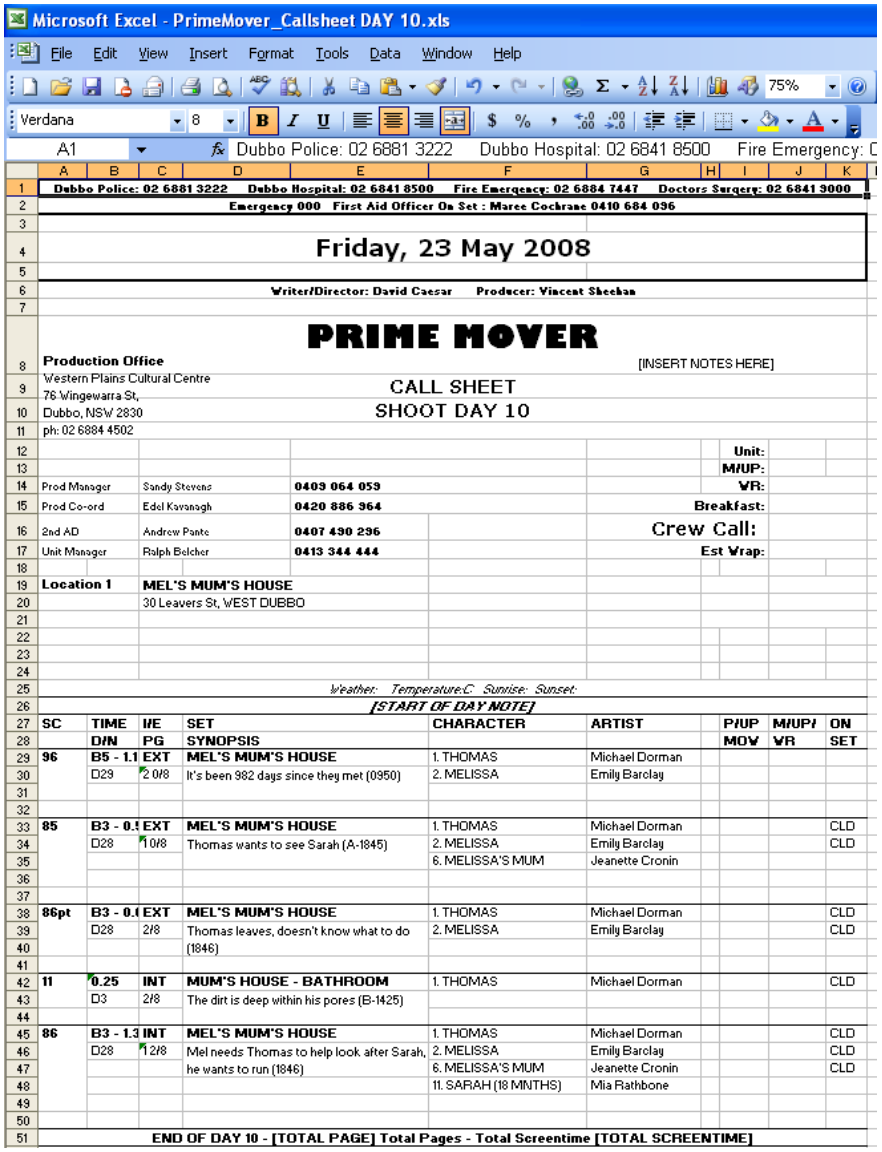
Client Testimonials

- *"I have managed over a dozen productions offices, and the amount of time this system could save is incredible. Seeing the system up and running makes me realize how manual and laborious many of the activities are in any production office."* (Production Manager in "Rope Burn")
- *“I so often make errors when calculating DPR or even the Call Sheet, it is much easier to use the tool to double check figures and ratios.”* (Production Manager in "Family Man")
- *"I found the electronic form simple and easy to fill in. It was really just the same as using a paper form, but much cleaner and neater e.g. no messy handwriting, smudges or crumpled paper.*" (2nd Assistant Director in "Family Man")
- **… …**

Field Study : Prime Mover



Call Sheet Excel Spreadsheet Format



Microsoft Excel - PrimeMover_Callsheet DAY 10.xls

File Edit View Insert Format Tools Data Window Help

Verdana 8 — 75%

A1 — Dubbo Police: 02 6881 3222 Dubbo Hospital: 02 6841 8500 Fire Emergency: C

1	Dubbo Police: 02 6881 3222 Dubbo Hospital: 02 6841 8500 Fire Emergency: 02 6884 7447 Doctors Surgery: 02 6841 9000										
2	Emergency 000 First Aid Officer On Set : Maree Cochrane 0410 684 096										
3											
4	Friday, 23 May 2008										
5											
6	Writer/Director: David Caesar Producer: Vincent Sheehan										
7											
8	PRIME MOVER										
9	Production Office							[INSERT NOTES HERE]			
10	Western Plains Cultural Centre			CALL SHEET							
11	76 Wingewarra St,			SHOOT DAY 10							
12	Dubbo, NSW 2830								Unit:		
13	ph: 02 6884 4502								M/UP:		
14	Prod Manager	Sandy Stevens	0409 064 059						WR:		
15	Prod Co-ord	Edel Kavanagh	0420 886 964						Breakfast:		
16	2nd AD	Andrew Ponte	0407 490 296						Crew Call:		
17	Unit Manager	Ralph Belcher	0413 344 444						Est Wrap:		
18											
19	Location 1	MEL'S MUM'S HOUSE									
20		30 Leavers St, WEST DUBBO									
21											
22											
23											
24											
25	Weather: Temperature:C Sunrise: Sunset:										
26	[START OF DAY NOTE]										
27	SC	TIME	I/E	SET	CHARACTER	ARTIST		P/UP	M/UP/	ON	
28		D/N	PG	SYNOPSIS				MOV	WR	SET	
29	96	B5 - 1.1	EXT	MEL'S MUM'S HOUSE	1. THOMAS	Michael Dorman					
30		D29	2 0/8	It's been 982 days since they met (0950)	2. MELISSA	Emily Barclay					
31											
32											
33	85	B3 - 0.!	EXT	MEL'S MUM'S HOUSE	1. THOMAS	Michael Dorman				CLD	
34		D28	1 0/8	Thomas wants to see Sarah (A-1845)	2. MELISSA	Emily Barclay				CLD	
35					6. MELISSA'S MUM	Jeanette Cronin					
36											
37											
38	86pt	B3 - 0.(	EXT	MEL'S MUM'S HOUSE	1. THOMAS	Michael Dorman				CLD	
39		D28	2/8	Thomas leaves, doesn't know what to do	2. MELISSA	Emily Barclay				CLD	
40				(1846)							
41											
42	11	0.25	INT	MUM'S HOUSE - BATHROOM	1. THOMAS	Michael Dorman				CLD	
43		D3	2/8	The dirt is deep within his pores (B-1425)							
44											
45	86	B3 - 1.3	INT	MEL'S MUM'S HOUSE	1. THOMAS	Michael Dorman				CLD	
46		D28	1 2/8	Mel needs Thomas to help look after Sarah,	2. MELISSA	Emily Barclay				CLD	
47				he wants to run (1846)	6. MELISSA'S MUM	Jeanette Cronin				CLD	
48					11. SARAH (18 MNTHS)	Mia Rathbone					
49											
50											
51	END OF DAY 10 - [TOTAL PAGE] Total Pages - Total Screentime [TOTAL SCREENTIME]										

Scheduler

:: Schedule ::

Main Schedule

:: Menu ::

Home

Cast
Crew
Locations

Scheduler (Stripboard)
Scheduler (Mini)

DAY # 1, Monday 12 May 2008

Sc: 32	EXT DAY	DUBBO TRUCK DEPOT Tom thanks Johnnie for putting a word in (1300)	EST TIME: 0.40	
Sc: 2 p/up	EXT DAY	DUBBO TRUCK DEPOT Hero establisher of the yard with Thomas arriving	EST TIME:	
Sc: 28	E/I DAY	DUBBO DEPOT - PHIL'S TRUCK Tom tries reversing, Johnnie knows someone with money (1026)	EST TIME: 0.50	
Sc: 16	EXT NIGHT	DUBBO TRUCK DEPOT Johnnie is taking Thomas on a trip (0510)	EST TIME: 0.20	

DAY # 2, Tuesday 13 May 2008

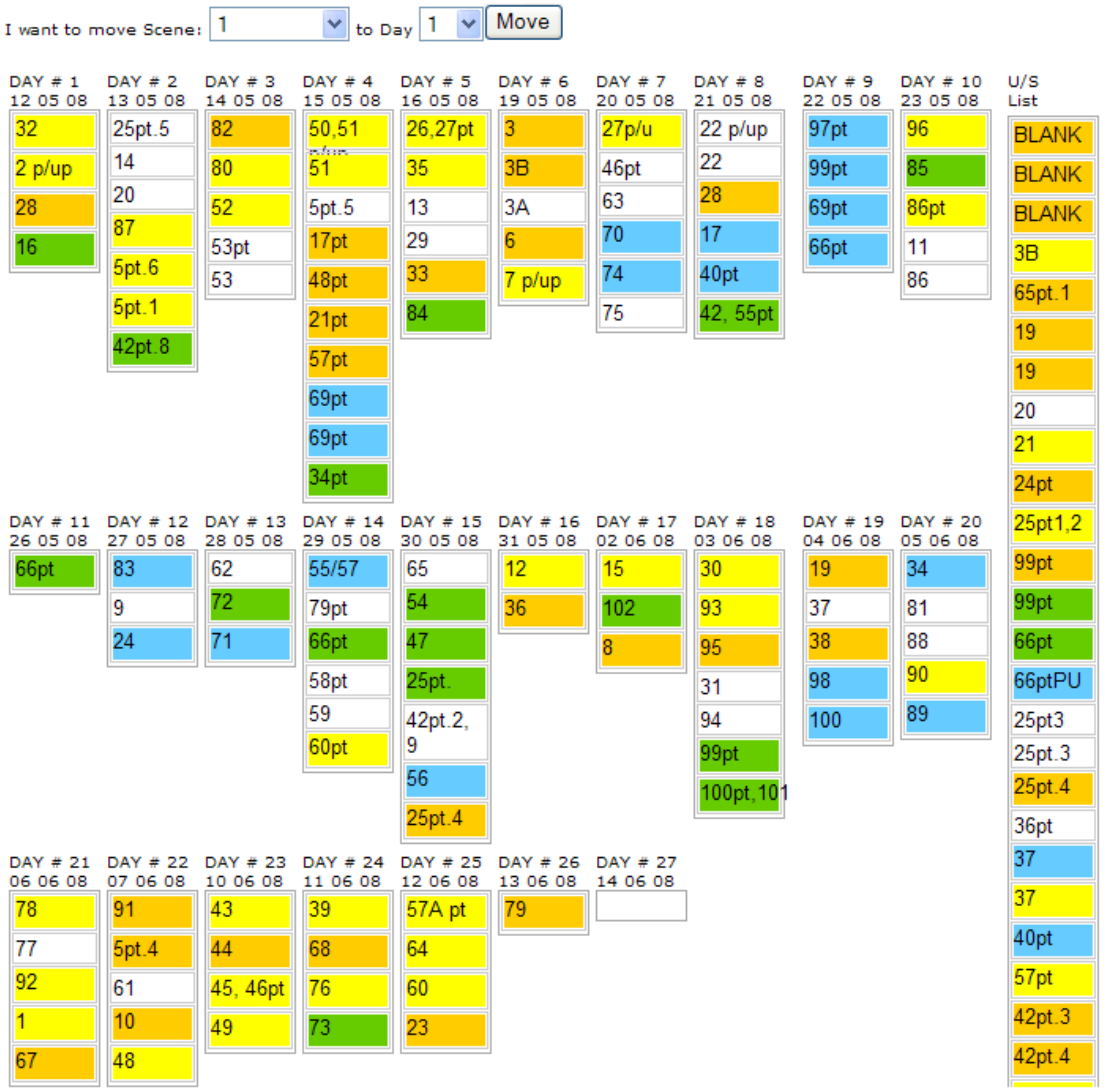
Sc: 25pt.5	INT DAY	DUBBO DEPOT - PAINT SHOP Montage - Thomas painting	EST TIME: 0.00	
Sc: 14	INT DAY	DUBBO DEPOT - PAINT SHOP Thomas paints, Johnnie offers to take him on a run (0925)	EST TIME: 0.40	
Sc: 20	INT DAY	DUBBO DEPOT - PAINT SHOP Phil invites Thomas on a run to Perth (1140)	EST TIME: 0.25	
Sc: 87	EXT DAY	DUBBO TRUCK DEPOT Thomas wouldn't get more than 100K, he's got till Monday (0745)	EST TIME: 1.00	
Sc: 5pt.6	EXT DAY	DUBBO TRUCK DEPOT Montage - Johnnie loves his car/Thomas hops in car (A)	EST TIME: 0.00	
Sc: 5pt.1	EXT DAY	DUBBO TRUCK DEPOT Title Montage - Thomas washing trucks as big loads arrive (A)	EST TIME: 1.00	
Sc: 42pt.8	EXT NIGHT	DUBBO TRUCK DEPOT Montage - Thomas waves to truckies, tightens load	EST TIME: 0.00	

DAY # 3, Wednesday 14 May 2008

QUT

AFTRS TRANSFORMINGFUTURES

Scheduler Overview



Current and Future Activities

- Continuation of YAWL4Film
  - Development of Suite of Support Tools
  - Extension to other areas of Creative Industries
- Simulation
- Inter-process communication
- Configurable reference models
- Monitoring Capabilities
- Analysis Capabilities (strengthening link with ProM)

Epilogue

- Join Us!
  - E.g. case studies, joint development, further research
  - YAWL Foundation - www.yawlfoundation.org
- Relevant background web sites
  - BPM Center – www.bpmcenter.org
  - Workflow Patterns – www.workflowpatterns.com
  - YAWL – www.yawl-system.com and www.sourceforge.net/projects/yawl
- Commercial interest
  - YAWL Group - www.yawlgroup.com
  - Acclario BPM - www.acclariobpm.com (Scandinavia)
- Other relevant sites
  - Process mining – www.processmining.org
  - Service interaction – www.serviceinteraction.com
  - ARC Centre of Excellence for Creative Industries & Innovation - http://www.cci.edu.au/

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