WS-BPEL 2.0
Features and Status Overview

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WS-BPEL Features and Status

- Advanced features
- Abstract and executable processes
- Changes from BPEL 1.1
- Status of WS-BPEL
Parallel Processing

- flow
- parallel forEach
- scope
- event handler
Event Handling

- Managed within a Scope
- `<pick>` activity
  - Specifies that the process awaits the occurrence of one or a set of events
- Event Handlers
  - Invoked concurrently to the process
- Message Events
  - Triggered by incoming messages
- Timer Events
  - Deadline
    - A specific time at which the event is triggered
  - Duration
    - A specific interval after which the event is triggered
Compensation & Fault Handling
Abstract & Executable Processes

- Executable Processes
  - Contain the partner’s business logic behind an external protocol
  - Model actual behavior of a participant in a business interaction
  - Encompass enough detail to fully specify execution
Abstract & Executable Processes

- Executable Processes
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Abstract Processes

- Partially specified processes that are not intended to be executed.
- May hide some of the required concrete operational details.
- Serve a descriptive role.
- Used to guide executable processes.
- More than one possible use case.
Executable Processes View

**Traveler Process**
- plan trip
- submit to agent
- receive confirmation
- receive tickets

**Agent Process**
- get itinerary
- select airline
- order tickets
- receive confirmation
- send confirmation
- send tickets

**Airline Process**
- get order
- reserve seats
- charge credit card
- confirm flight
- send tickets
Abstract Profiles

- Profiles address varying requirements among Abstract Processes
- Two profiles provided in WS-BPEL
  - Observable Behavior
  - Process Template
Abstract Profiles & Use Cases

- **Use cases**
  - Constraints on message exchange
    - Specify order in which messages are consumed or produced
  - View on internal processes
    - Only projection of internal (executable) process is visible
  - Bridge model to executable
    - Provide hooks to executable for model definition to enable abstraction
  - Template as “best practice”
    - Specification of common activities, major data structures, and main control flow
What’s New since BPEL 1.1

- Data Access
  - XSD complex-type variable
  - Simplified XPath expressions
  - Simplified message access on WSDL
  - Elaborated <copy> operation behavior in <assign>
  - keepSrcElement option in <copy>
  - Extension <assign> operations
  - Standardized XSLT 1.0 function for use within XPath expressions
  - XML data validation model
  - New <validate> activity
  - “inline” variable initialization at the point of variable declaration
What’s New since BPEL 1.1

- Scope Model
  - Elaboration of Compensation & Fault Models
  - Scope Isolation and Control Links interaction in <flow>
  - New <rethrow> activity
  - <terminationHandler>
  - exitOnStandardFault

- Message Operations
  - Join-style Correlation Set
  - Scope-local PartnerLink declaration
  - initializePartnerRole
  - messageExchange construct
What’s New since BPEL 1.1

- Other New Activities
  - <forEach>
  - <repeatUntil>
  - <extensionActivity>

- Syntactic makeover
  - <switch> -> <if>-<elseif>-<else>
  - <terminate> -> <exit>
  - <compensate> and <compensateScope>
What’s New since BPEL 1.1

- Other additions
  - Improved event handling
  - `<repeatEvery>` alarm feature
  - Formal `<documentation>` support
  - `<extension>` directive
  - `<import>`
WS-BPEL Schedule

Status (March 2007)
- First and second public reviews completed
- Approved Committee Specification submitted for standardization
- Five organizations have certified use of WS-BPEL in product
  - ActiveEndpoints, IBM, Intalio, SEEBURGER, Sun
WS-BPEL Schedule

- Next steps
  - OASIS standard - April 2007
    - Voting opens March 19 and closes March 30
  - OASIS Symposium - April 15-20, 2007
    San Diego, California, USA
    - WS-BPEL Lightning Round - April 16
    - Business Process Sessions - April 16
    - WS-BPEL Workshop - April 18