Prosperity Heights Software

European Reuse Workshop

Tailoring Reuse-driven Processes in a Process Improvement Context

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Context

- **Process Improvement:**
  - **Software Capability Maturity Model (CMM)**
  - **Reuse as a key process driver for quality and productivity**
  - **Reuse Capability Model (RCM)**

- **Domain-specific Engineering:**
  - **A market-directed family of products**
  - **Reuse-driven Software Processes (RSP) methodology (a family of processes)**
  - **Process tailoring to organization needs and capabilities**

RCM Factor Categorization

- **Process Improvement Factors** (43)
  for reduced variance in process performance

  – **Elaborated CMM Factors** (15)
  taking a reuse perspective on key CMM concerns

  – **RSP Common Factors** (28)
  *quality concerns for any reuse-driven process
  (potential CMM extensions)*

- **RSP Process Definition Factors** (17)
  for targeting a good level of reuse capability

Elaborated CMM Factors

- **Asset Quality (2)**

- **Intergroup Coordination**

- **Process Definition and Integration**

- **Measurement**

- **Continuous Process Improvement**

- **Training**

- **Technology Innovation**

RSP Common Factors

- **Asset Awareness and Accessibility**

- **Asset Evaluation and Verification**

- **Application Integrability**

- **Commonality and Variability Definition**

- **Asset Value Determination**

- **Asset Reusability**

- **Asset Quality (3)**

- **Organizational Commitment (3)**

- **Costing and Pricing**

- **Legal and Contractual Constraints**

- **Tool Support**

RSP Process Definition Factors

- **Organizational Commitment (1)**

- **Planning and Direction**

- **Needs Identification**

- **Asset Interface and Architecture Definition**

- **Needs and Solutions Relationships**

- **Asset Identification**

Process Definition Factors as Process Family Decisions

- **Nature and Degree of Management Integration** *(independent, coordinated, integrated, unified)*

- **Source of Needs Motivating Domain Efforts** *(projects or customers; current or anticipated)*

- **Level of Product Integration** *(component, work product, product)*

- **Cultural Stability/Process Optimization Tradeoff** *(greater capability => change => risks)*

RSP Levels of Capability

Anticipating	*Domain-Market Coevolution*
Leveraged	*Products/Process Standardization*
Integrated	*Integrated Products, Management*
Opportunistic	*Enhanced Project-level Reuse*