



COSYSMO-IP

COnstructive **SY**Stems Engineering Cost Model – Information Processing

Status and Plans

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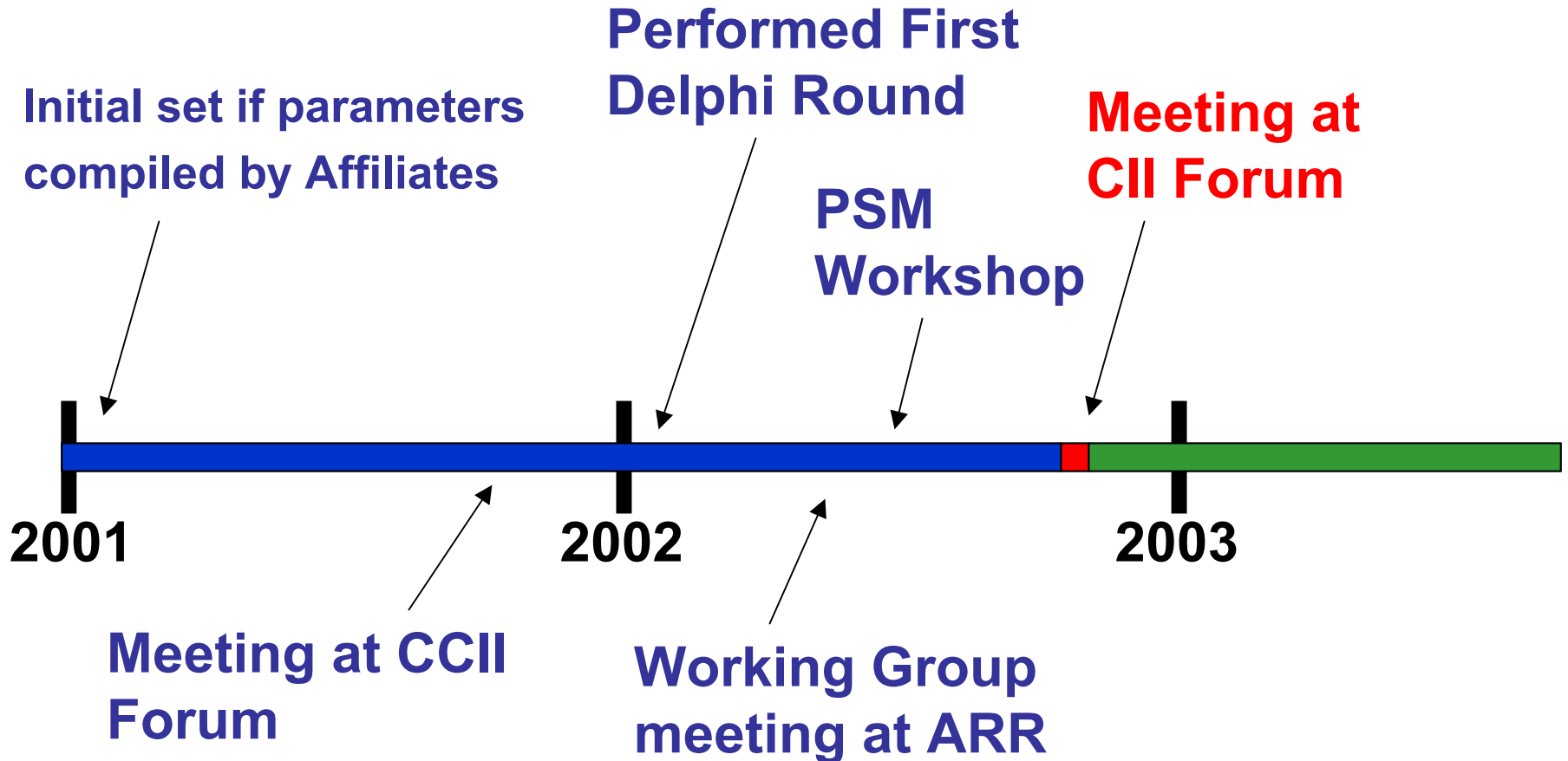
Outline

- **Workshop Objectives**
- **Background on COSYSMO-IP**
- **Outcomes from PSM Meeting (July 2002)**
- **Issues and Answers**
- **Overlap between COSYSMO & COCOMOII**
- **EIA632 & ISO15288**
- **Raytheon myCOSYSMO Prototype**
- **Data Collection Process**

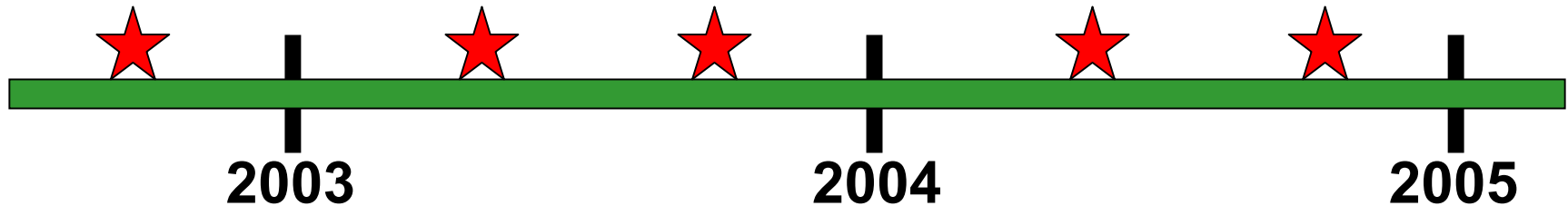
Objectives of the Workshop

- **Reach consensus on resolving the issues**
- **Converge on scope of COSYSMO-IP model**
- **Address INCOSE issues**
- **Address definitions of model parameters**
- **Discuss data collection process**
- **Promote involvement by Affiliates**
- **Define next steps for CSI and INCOSE conferences**

Past, Present, and Future



Future Parameter Refinement Opportunities



Driver definitions

Data collection (Delphi)

First iteration of model

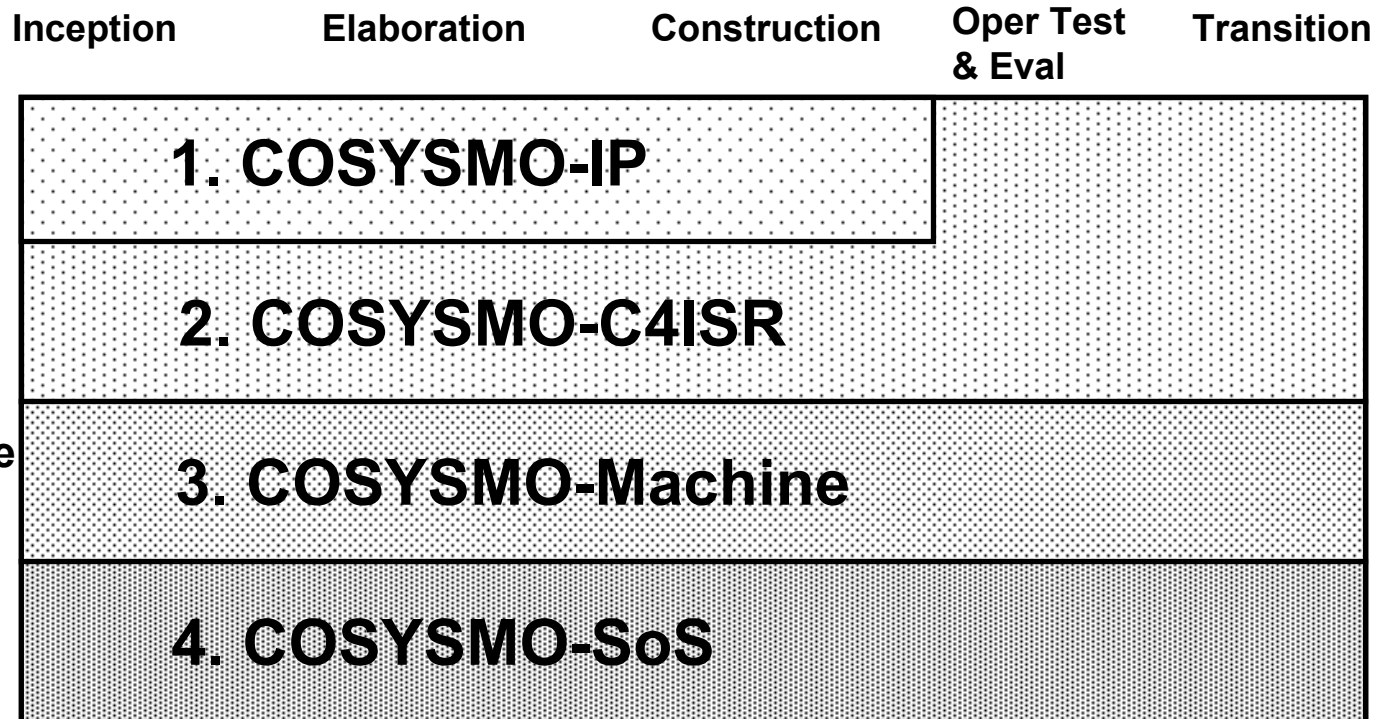
Model calibration

COSYSMO-IP: What is it?

The purpose of the COSYSMO-IP project is to develop an initial increment of a parametric model to estimate the cost of system engineering activities during system development.

The focus of the initial increment is on the cost of systems engineering for information processing systems or subsystems.

Candidate COSYSMO Evolution Path



What Does COSYSMO-IP Cover?

- Includes:
 - System engineering in the inception, elaboration, and construction phases, including test planning
 - Requirements development and specification activities
 - Physical system/information system tradeoff analysis
 - Operations analysis and design activities
 - System architecture tasks
 - Including allocations to hardware/software and consideration of COTS, NDI and legacy impacts
 - Algorithm development and validation tasks
- Defers:
 - Physical system/information system operation test & evaluation, deployment
 - Special-purpose hardware design and development
 - Structure, power and/or specialty engineering
 - Manufacturing and/or production analysis

Issues and Answers

Issue

Answer

Application scope



COSYSMO-IP first

Life Cycle scope



**Currently front-end;
negotiable**

Too many size drivers



Reduced from 7 to 4

Conflicting cost drivers



Reduced from 17 to 12

Too software-oriented



IP systems include HW

**Overlap between
COSYSMO and CII**

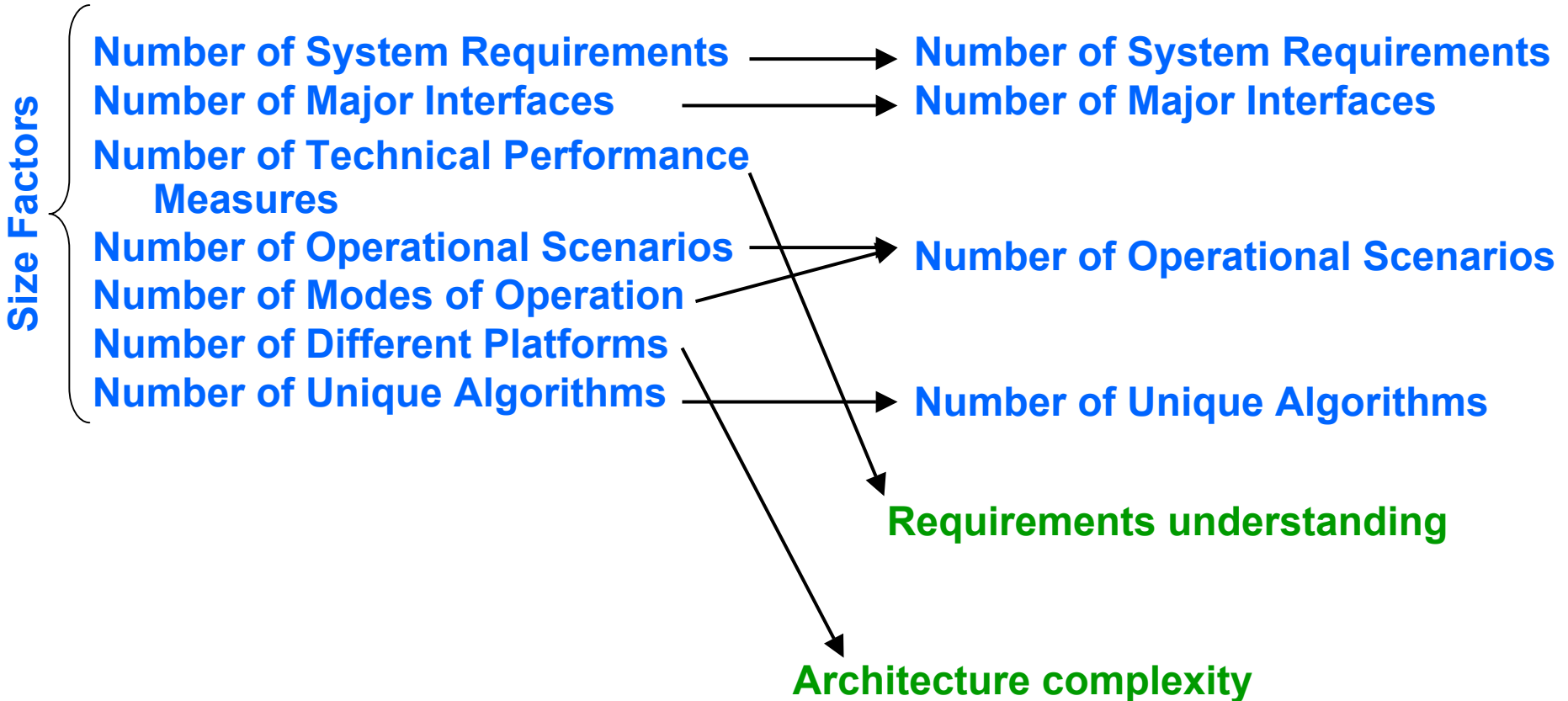


**Candidate starting point
identified**

Mapping of Old to New COSYSMO-IP Drivers

Old (7)

New (4)



Mapping of Old to New COSYSMO-IP Drivers

Old (9)

New (5)

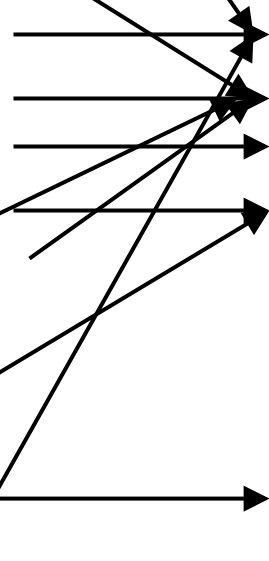
of TPMs

of Platforms

Application Cost Factors

- Requirements understanding
- Architecture complexity
- Level of service requirements
- Legacy Transition complexity
- COTS assessment complexity
- Platform difficulty
- Required business process reengineering
- Technology Maturity
- Physical system/information subsystem tradeoff analysis complexity

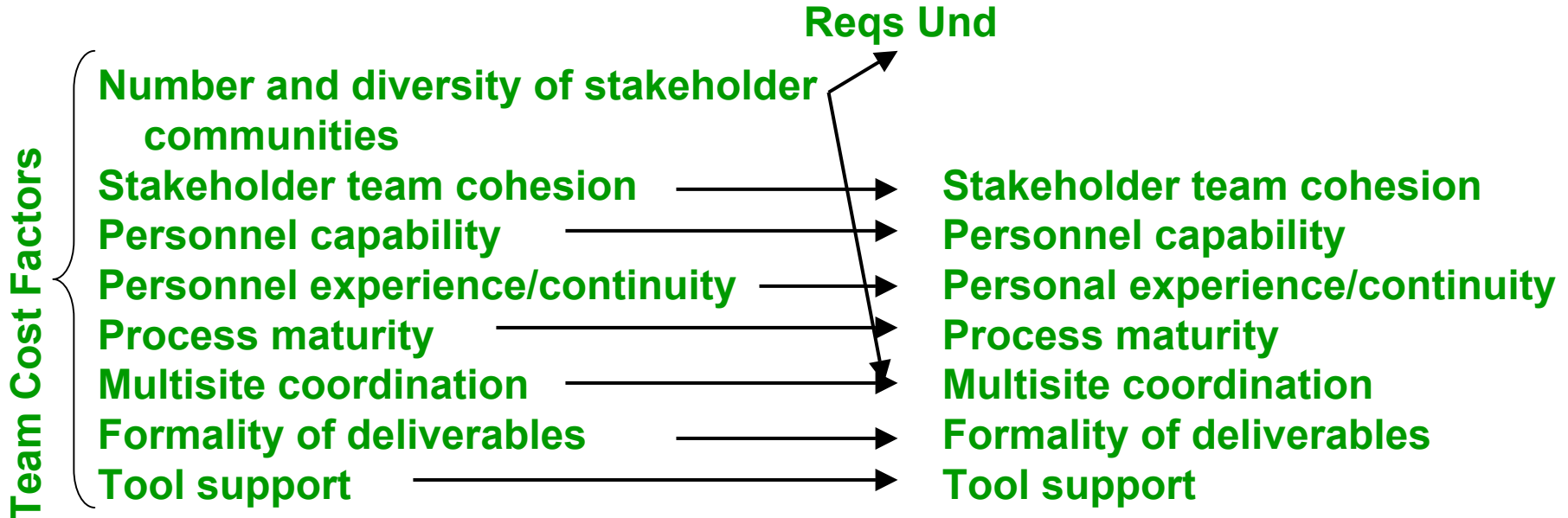
- Requirements understanding
- Architecture complexity
- Level of service requirements
- Migration complexity
- Technology Maturity



Mapping of Old to New COSYSMO-IP Drivers

Old (8)

New (7)



Other Open Issues

- **Business Process Reengineering driver**
- **Difference between # of Modes and # of Scenarios**
- **Schedule duration driver**
- **Involvement of Commercial Companies**

of Modes vs. # of Scenarios

Wireless Communications example

Modes:

TDMA

CDMA

GSM

Scan for channel

Scenarios:

Voice

E911

E-mail

Web browsing

Points of Contact

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