

GSAW 2007

**Software Acquisition Best Practices
for Ground Systems**

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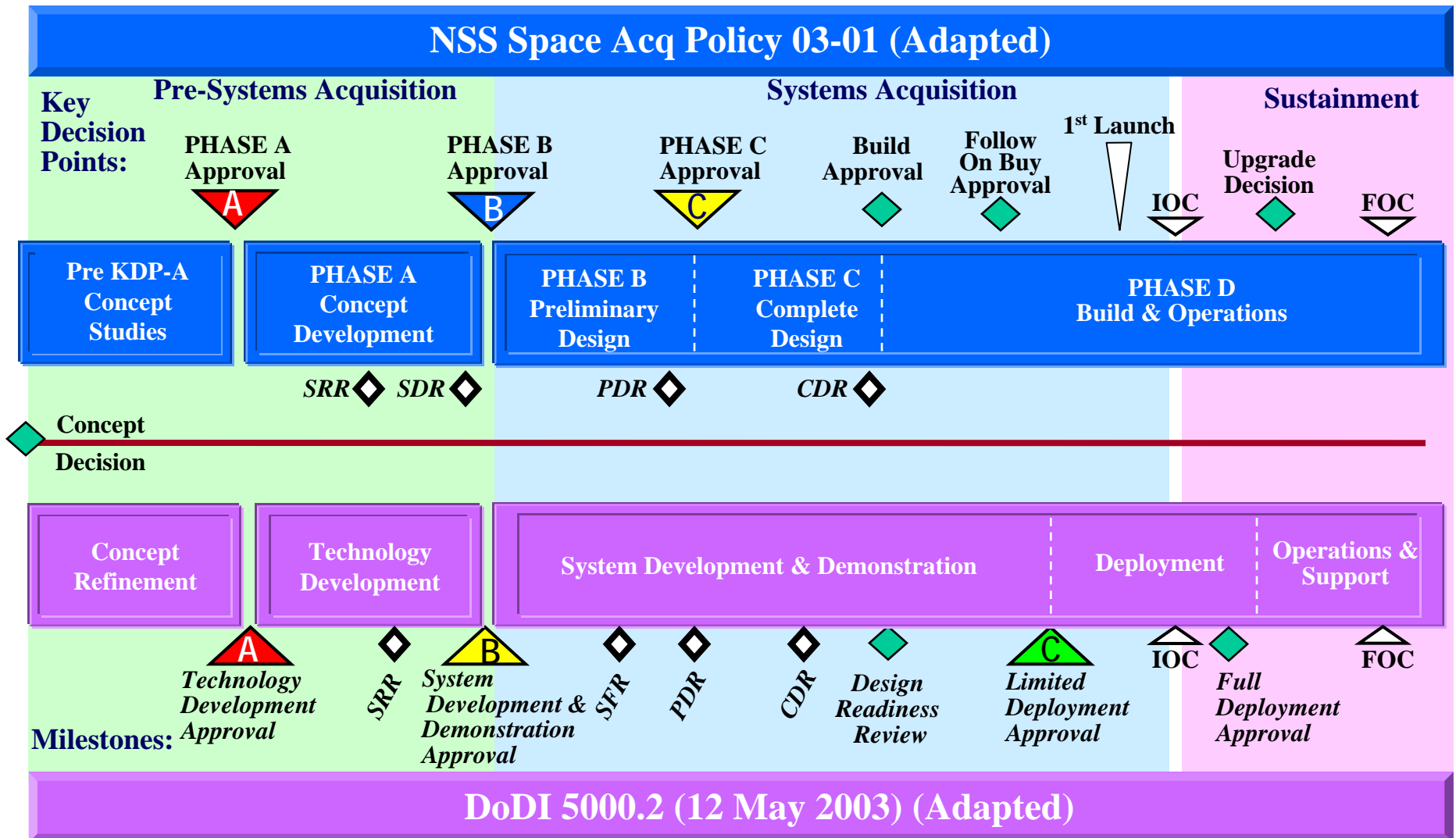
The Big Issues and Challenges in Acquiring Ground Systems



Executability

Mission Assurance

Example DoD and NSS Acquisition Models Tailored for Software-Intensive Systems without Production



Reducing Space System Acquisition Risk with Software Acquisition Best Practices

NSS Space Acq Policy 03-1

Pre-Systems Acquisition

Systems Acquisition

Sustainment

Key Decision Points:

PHASE A Approval



PHASE B Approval



PHASE C Approval



1st Launch



IOC



FOC



Pre KDP-A
Concept
Studies

PHASE A Concept
Development

PHASE B
Preliminary
Design

PHASE C
Complete
Design

PHASE D
Build & Operations

SRR



SDR



PDR



CDR



Software Product
& Process Risk
Reduction

Contractor
Capability
Evaluation

Software-
Inclusive System
Requirements

Robust Software
Architecture

Software-
Inclusive
Technical
Reviews

Robust Software
Test Program

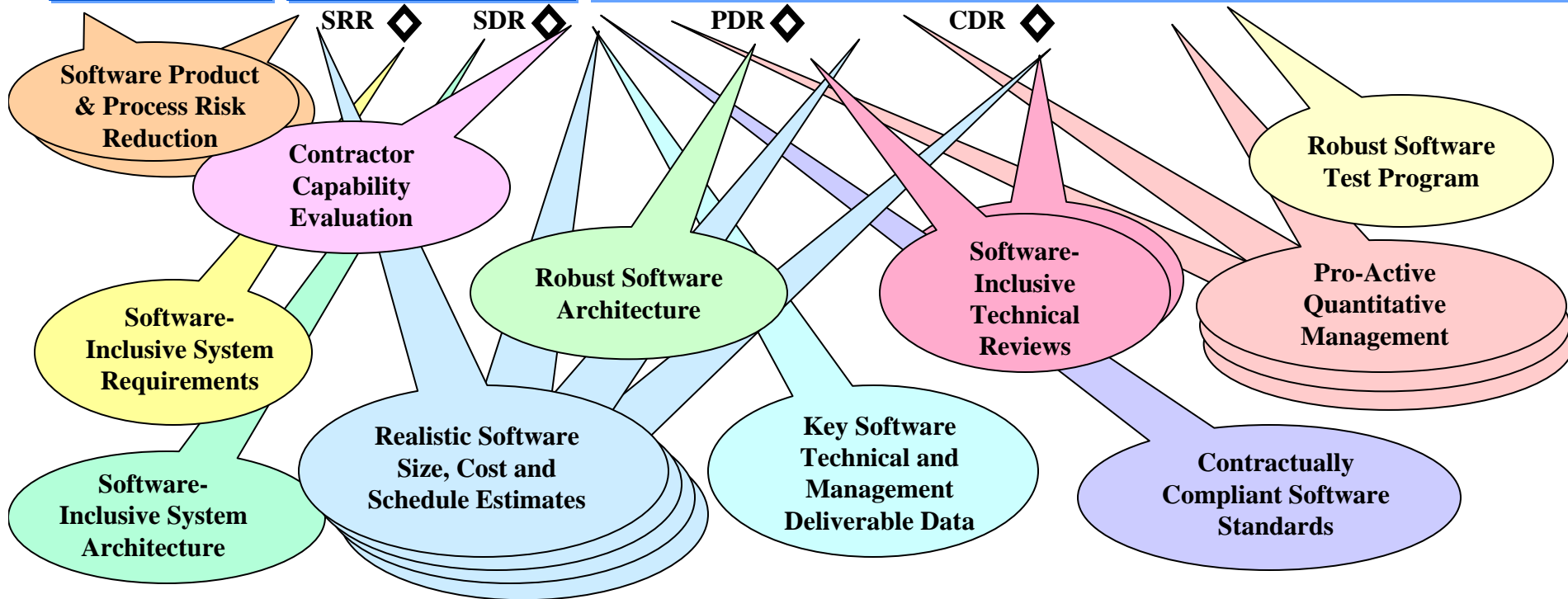
Software-
Inclusive System
Architecture

Realistic Software
Size, Cost and
Schedule Estimates

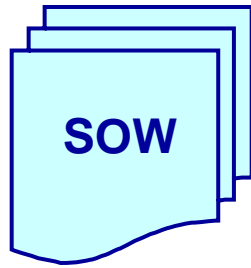
Key Software
Technical and
Management
Deliverable Data

Pro-Active
Quantitative
Management

Contractually
Compliant Software
Standards



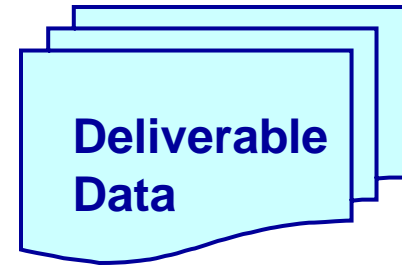
Software Acquisition “Best Practice” Contract



- Comply with SDP
- Do COTS SW trade studies
- Hold SW technical reviews
- Undergo periodic software process appraisals



- Software-inclusive system requirements
- COTS software support requirements



- Software plans
- Reqs & architecture
- Test documentation
- Metrics reports
- O&M documentation



- Electronic access to all software products
- Access to prime & subcontractor software technical & mgmt data

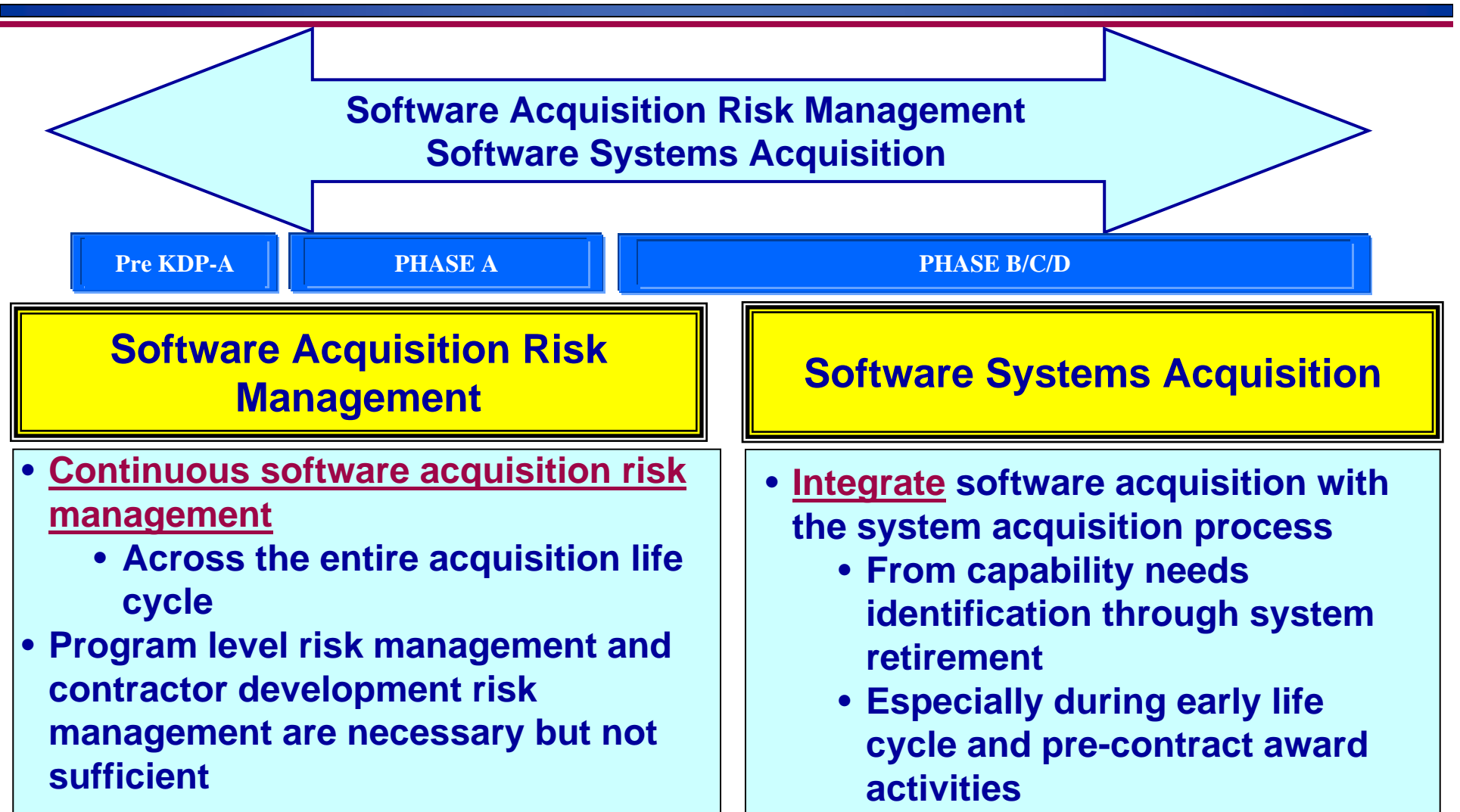


- Full life cycle software standard
- Other software-related standards



- Software quality
- SW architecture for evolution and legacy transition

Best Practices that Span the Acquisition Life Cycle



Conclusion

- **Software acquisition best practices do not guarantee success**
 - ❖ They are not a panacea!
- **Using best practices, however, can reduce risk in complex software-intensive ground system acquisitions**

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Acronyms and Abbreviations

Acq	Acquisition
CDR	Critical Design Review
COTS	Commercial Off-the-Shelf
Docs	Documents
DoD	Department of Defense
DoDI	DoD Instruction
FOC	Full Operational Capability
GSAW	Ground Systems Architecture Workshop
IOC	Interim Operational Capability
KDP	Key Decision Point
Mgmt	Management
NSS	National Security Space
O&M	Operations and Maintenance
PDR	Preliminary Design Review
Reqs	Requirements
SDP	Software Development Plan
SDR	System Design Review
SFR	System Functional Review
SOW	Statement of Work
SRR	System Requirements Review
SW	Software