

MILESTONE DEVELOPMENT - SSE

RAY ROBERTS

- OVERALL APPROACH:
 - *Broad View:*
Define Level II SE&I Control Milestones through FEL
 - *Focused View:*
Develop More Detailed SE&I Master Schedule from PRR to PDR

LEVEL II SE&I CONTROLLED MILESTONES		LEVEL II MASTER CONTROLLED MILESTONES					
		PRR	SRA ▽	IDA ▽	PDR	CDR	
SE	• ASSY SEQUENCE PLAN		P	B	RB		
	• SYSTEMS ENGINEERING ANALYSIS						
	- GROUP I STRUCT/DYNAM MODEL		P	B	RB		
	- GROUP II THERMAL MODEL		P	B	RB		
	- GROUP III CONTAMINATION MODEL			P	U		B
	• ACD'S	B		RB	RB		
	• MATERIALS & PROCESS RQMTS		P	U	B		
	• INT/EXT ENVIRONMENT RQMTS	B	RB	RB	RB		RB
	• DESIGN CRITERIA & PRACTICES		P	U	B		
	• DIST/SYS FUNCTIONAL SCHEMATICS		P	U	B		
• REFERENCE COORDINATE SYSTEM	B	RB					
• POWER CONTROL PLAN		P	U				
• MASS PROPERTIES PLAN		P	U				

PRELIMINARY

EMS Milestones - 8/16/88

SRA = System Requirements Assessment
IDA = Interim Design Assessment

P = Preliminary U = Update B = Baselined RB = Revised Baseline
PRR = 5/88 SRA = 1/89 IDA = 7/89 PDR = 5/90 CDR = 5/92

LEVEL II SE&I CONTROLLED MILESTONES	LEVEL II MASTER CONTROLLED MILESTONES				
	PRR	SRA ▽	IDA ▽	PDR	CDR
SYSTEM ENGINEERING (CONTINUED) <ul style="list-style-type: none"> • ACD's EPS DMS TCS C & T GN & C EVA ECLSS MAN SYSTEMS FMS 					

PRELIMINARY

LEVEL II SE&I CONTROLLED MILESTONES		LEVEL II MASTER CONTROLLED MILESTONES				
		PRR	SRA ▽	IDA ▽	PDR	CDR
SI	• TOP LEVEL ASSY DRAWINGS			P	U	B
	• ENGINEERING DATABASE RDD		P	U	B	RB
	• INTEGRATED MASTER MEASURE LIST			P	U	B
	• BCD UPDATED		RB	U	RB	RB
	• ICD'S (PRELIM & BASELINED)					
	- BLOCK I- REQUIRED FOR MTC			P	B	RB
	- BLOCK II- REQUIRED FOR PMC				P	B
	- BLOCK III- REQUIRED FOR POP					B
	AND ASSY COMPLETE					
	• NSTS/SSP PAYLOAD INTEGR PLAN			P	B	RB
• S/W DEVELOPMT & INTEGR REQMTS			P	B	RB	
• ASSEMBLED SYSTEM SCHEMATICS				P	B	
• MULTI-SYSTEMS TEST REQMTS.						
• COMMONALITY DATABASE			P	B	RB	

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LEVEL II SE&I CONTROLLED MILESTONES		LEVEL II MASTER CONTROLLED MILESTONES					
		PRR	SRA ▽	IDA ▽	PDR	CDR	
SV	<ul style="list-style-type: none"> • MASTER VERIFICATION REQMTS • MASTER VERIFICATION PLAN • FSE/OSE PROCESS REQ. DOC. • GSE PROCESS REQ. DOC. • SUPPORT EQUIP. DATA BASE 	B	RB		RB		RB
		P	B		RB		RB
		B	RB		RB		RB
		B			RB		RB
		P	U	B	RB		RB
	<p>MULTI SYSTEM INTEGRATION FACILITY (MSIF)</p> <p>SOFTWARE PRODUCTION FACILITY (SPF)</p>						

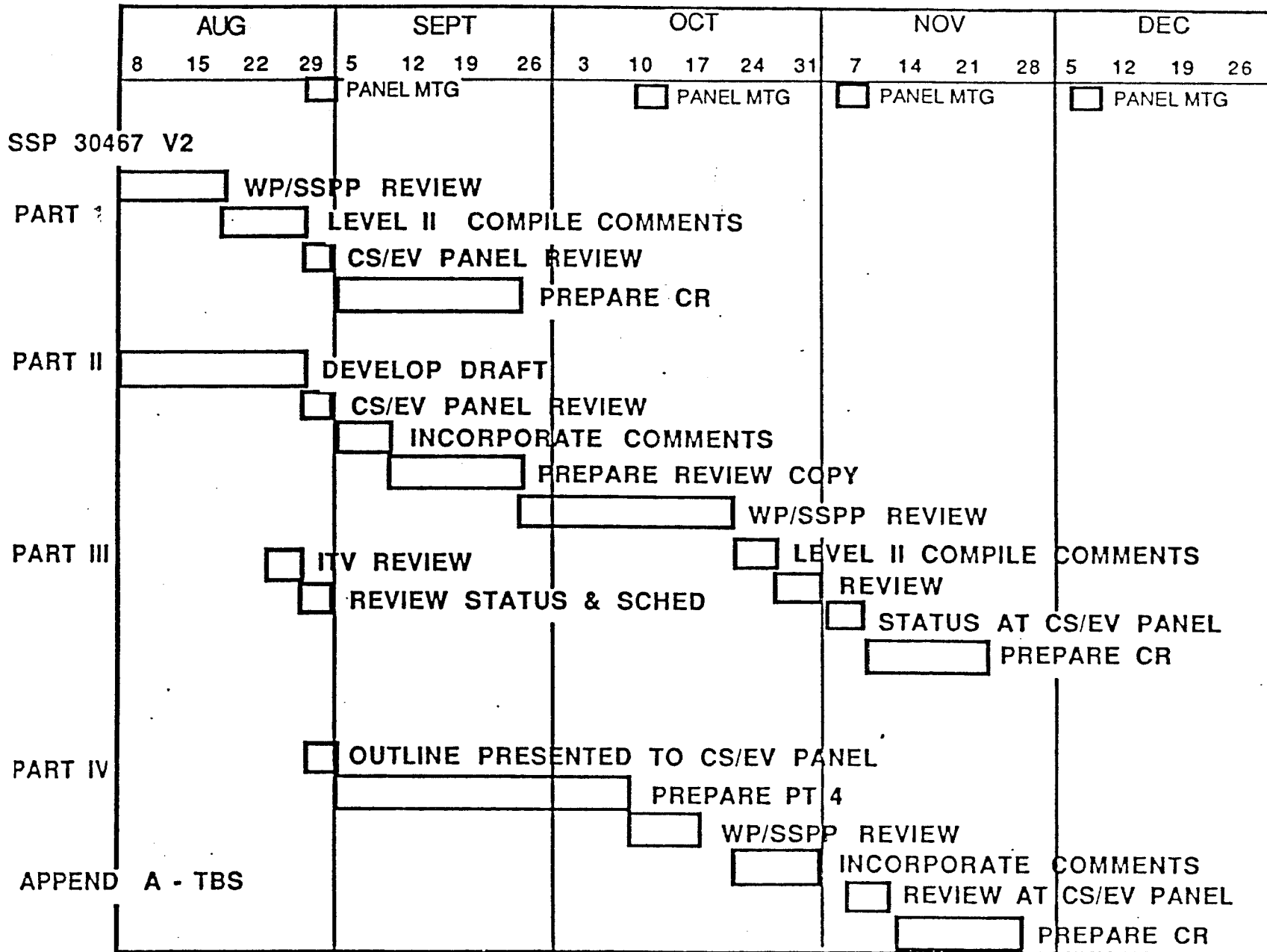
PRELIMINARY

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VERIFICATION DOCUMENT UPDATE SCHEDULE



SYSTEM REQUIREMENTS ASSESSMENT (SRA) OBJECTIVES

- **NON-RIDABLE FINAL ASSESSMENT OF REQUIREMENTS**
- **CONFIRM ADEQUACY OF SYSTEM ARCHITECTURE/ DESIGN**
 - **Functional Block Diagrams & System Schematics**
 - **Level II & III PRR Requirements**
- **INCLUDES SYSTEM DEVELOPMENT FACILITIES PLANNING**
- **OUTPUT: UPDATED SYSTEM BASELINE**
(Incorporates Post PRR Study Results)

INTERIM DESIGN ASSESSMENT (IDA) OBJECTIVES

- NON-RIDABLE PRELIM DESIGN ASSESSMENT (19 STAGES)
 - PRR Requirements and Architectures
 - 19 Stages of Manned Base Assembly and Polar Platform
- ENSURE DISTRIBUTED SYSTEM / ELEMENT ICDs SUPPORT ASSEMBLY SEQUENCE
 - System Block Diagrams and Schematics
 - Assembled Element Sketches / Drawings
- IDENTIFY COMMONALITY CANDIDATES
 - Within Manned Base at Each Stage of Assembly
 - Between Manned Base and Polar Platform

INTERIM DESIGN ASSESSMENT (IDA) OBJECTIVES

(Continued)

- CONFIRM PROPER ALLOCATION OF FUNCTIONAL REQUIREMENTS BETWEEN HARDWARE AND SOFTWARE
- EVALUATE SYSTEM INTEGRABILITY AND TESTABILITY
- OUTPUT: UPDATED SYSTEM BASELINE REQUIREMENTS
 - (ACDs 50% Complete; ICDs 25% Complete)

PRELIMINARY DESIGN REVIEW (PDR)

- FORMAL TECHNICAL REVIEW

- Design analyses

- Layout, general arrangement, and envelope drawings

- Schematics and block diagrams

- Sizing, trade study, and design study results

- Material and process specification listings

- Applicable procurement specifications

- Test requirements

- Mockup and models

- Updated plans, procedures, and schedules

- Commonality candidates; identification, rationale, and status

- Proposed additions to NASA baseline

- REVIEW COST AND SCHEDULE

- APPLICABLE ACD'S AND ICD'S BASELINED & PLACED UNDER CONFIGURATION CHANGE CONTROL

- OUTPUT: ACD'S 95% COMPLETE; ICD'S 50% COMPLETE

CRITICAL DESIGN REVIEW (CDR)

- **COMPLETED DESIGN COMPLIES WITH PROGRAM REQUIREMENTS**
- **DETAILED DESIGN 90% COMPLETED**
- **UPDATE ALL APPLICABLE ACD'S AND ICD'S**
- **OUTPUT: UPDATED ACD'S/ICD'S PLACED UNDER CONFIGURATION CHANGE CONTROL**