

**EMRL 1  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**System Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum System TRL = 4 or 5		
All system engineering/design requirements defined; 50% validated		
50% of system level physical and functional interfaces defined		
Manufacturing processes and system level integration demonstrated		
Materials, machines, tooling and test equipment established demonstrated in a lab environment		
Quality and reliability levels identified and established for 50% of the system		
Key characteristics identified for 50% of the system		
System PDR complete		
90% of items and components (hardware and software) at EMRL 2-3 or higher and are proven designs (DRR complete) or in production		
75% of major subsystems representing 80% of cost meet the requirements of EMRL 2		
Failure modes, effects and criticality analyses required for all levels		
Funding identified to proceed to EMRL 2		
Schedule and funding profile reflects achievement of EMRL 2 in 1-3 years		
Developmental tests complete for 75% of major subsystems		
Developmental test plans initiated at system level		
Safety assessment plans complete		
System design to cost goals validated		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 2  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Item/Component Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum item/component TRL = 6 or 7		
All item/component engineering/design requirements defined; 90% validated		
90% of item/component level physical and functional interfaces defined		
Item/component manufacturing processes and integration established in a production environment		
Item/component materials, machines, tooling and test equipment established in a production environment		
Quality and reliability levels identified and established for 90% of the item/component		
Key characteristics identified for 90% of the item/component		
Item/component CDR/DRR complete		
All item/component lower WBS parts at EMRL 3 or higher and are ready for production or in production		
All item/component lower WBS parts meet cost, quality and reliability targets		
Failure modes, effects and criticality analyses complete on all item/component lower WBS parts and 75% complete at the item/component level		
Funding identified to proceed to EMRL 3		
Schedule and funding profile reflects achievement of item/component EMRL 3 in 1-3 years		
Developmental tests complete for all item/component lower WBS parts		
IOT&E plans complete for the item/component		
Safety assessment plans complete for the item/component		
Item/component design to cost goals validated		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 2  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Subsystem Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum subsystem TRL = 6 or 7		
All subsystem engineering/design requirements defined; 90% validated		
90% of subsystem level physical and functional interfaces defined		
Subsystem manufacturing processes and integration established in a production environment		
Subsystem materials, machines, tooling and test equipment established in a production environment		
Quality and reliability levels identified and established for 90% of the subsystem		
Key characteristics identified for 90% of the subsystem		
Subsystem CDR/DRR complete		
All subsystem items and components at EMRL 3 or higher and are ready for production or in production		
All subsystem items and components meet cost, quality and reliability targets		
Failure modes, effects and criticality analyses complete on all subsystem items and components and 75% complete at the subsystem level		
Funding identified to proceed to EMRL 3		
Schedule and funding profile reflects achievement of subsystem EMRL 3 in 1-3 years		
Developmental tests complete for all subsystem items and components		
IOT&E plans complete for the subsystem		
Safety assessment plans complete for the subsystem		
Subsystem design to cost goals validated		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 2  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**System Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum System TRL = 6 or 7		
All system engineering/design requirements defined; 90% validated		
90% of system level physical and functional interfaces defined		
System level manufacturing processes and integration established in a production environment		
Materials, machines, tooling and test equipment established in a production environment		
Quality and reliability levels identified and established for 90% of the system		
Key characteristics identified for 90% of the system		
System DRR complete		
All items and components at EMRL 3 or higher and are ready for production or in production and meet cost, quality and reliability targets		
75% of major subsystems representing 80% of cost meet the requirements of EMRL 3 and are ready for or in LRIP		
Failure modes, effects and criticality analyses complete on all subsystems, items and components, and 75% complete at system level		
Funding identified to proceed to EMRL 3		
Schedule and funding profile reflects achievement of EMRL 3 in 1-3 years		
Developmental tests complete for major subsystems		
IOT&E plans complete		
Safety assessment plans complete		
System design to cost goals validated		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 3  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Item/Component Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum item/component TRL = 8 or 9		
All item/component engineering/design requirements defined and validated		
Minimal item/component engineering changes		
All lower WBS parts physical and functional interfaces defined and validated at item/component level		
All item/component manufacturing processes are understood and in control for LRIP		
All item/component materials, machines, tooling and test equipment purchased and ready for LRIP		
All item/component quality and reliability levels established and verified		
All item/component key characteristics identified and verified		
Follow up issues from item/component DRR cleared		
All item/component lower WBS parts (hardware and software) are ready for on time delivery or delivered		
All item/component lower WBS parts meet cost, quality and reliability targets		
Failure modes, effects and criticality analysis complete for the item/component		
Reliability growth plan in place for the item/component		
Funding identified for reliability growth		
Reliability growth testing in place		
Funding identified for LRIP		
Schedule and funding profile reflects achievement of EMRL 4 (FRP) for item/component in 1-2 years		
Minimal developmental tests yet to be completed		
IOT&E plans complete		
Initial safety assessment complete		
Item/component design to cost goals met for LRIP		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 3  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Subsystem Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum Subsystem TRL = 8 or 9		
All subsystem engineering/design requirements defined and validated		
Minimal subsystem engineering changes		
All item and component physical and functional interfaces defined and validated at subsystem level		
All subsystem manufacturing processes are understood and in control for LRIP		
All subsystem materials, machines, tooling and test equipment purchased and ready for LRIP		
All subsystem quality and reliability levels established and verified		
All subsystem key characteristics identified and verified		
Follow up issues from subsystem DRR cleared		
All subsystem items and components (hardware and software) are ready for on time delivery or delivered		
All subsystem items and components meet cost, quality and reliability targets		
Failure modes, effects and criticality analysis complete for the subsystem		
Reliability growth plan in place for the subsystem		
Funding identified for reliability growth		
Reliability growth testing for subsystem in place		
Funding identified for LRIP		
Schedule and funding profile reflects achievement of EMRL 4 (FRP) 1-2 years		
Minimal developmental tests yet to be completed		
IOT&E plans complete		
Initial safety assessment complete		
Subsystem design to cost goals met for LRIP		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 3  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**System Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum System TRL = 8 or 9		
All system engineering/design requirements defined and validated		
Minimal engineering changes		
All subsystem, item and component physical and functional interfaces defined and validated at system level		
All manufacturing processes are understood and in control for LRIP		
All materials, machines, tooling and test equipment purchased and ready for LRIP		
All quality and reliability levels established and verified		
All key characteristics identified and verified		
Follow up issues from DRR cleared		
All subsystems, items and components (hardware and software) are ready for on time delivery or delivered		
All subsystems, items and components meet cost, quality and reliability targets		
Failure modes, effects and criticality analysis complete system the system level		
Reliability growth plan in place at all levels		
Funding identified for reliability growth		
All reliability growth testing in place		
Funding identified for LRIP		
Schedule and funding profile reflects achievement of EMRL 4 (FRP) 1-2 years		
Minimal developmental tests yet to be completed		
All IOT&E plans complete		
Initial safety assessment complete		
Design to cost goals met for LRIP		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 4  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Item/Component Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
<b>Minimum Item/Component TRL = 9</b>		
<b>All engineering/design requirements defined, validated and met</b>		
<b>Essentially no engineering changes</b>		
<b>All item and component physical and functional interfaces defined and validated</b>		
<b>All manufacturing processes are understood and in control for FRP</b>		
<b>All materials, machines, tooling and test equipment purchased and ready for FRP</b>		
<b>All quality and reliability levels or targets met</b>		
<b>All key characteristics met</b>		
<b>All follow up issues from item and component FRP readiness review or similar type assessment cleared</b>		
<b>All item and component hardware and software are ready for on time delivery or delivered</b>		
<b>All cost, quality and reliability targets met</b>		
<b>Failure modes, effects and criticality analyses complete</b>		
<b>Reliability growth program implemented</b>		
<b>Funding in place for reliability growth</b>		
<b>Reliability growth testing implemented</b>		
<b>Funding identified for FRP</b>		
<b>Developmental tests complete</b>		
<b>IOT&amp;E complete</b>		
<b>Safety assessment complete</b>		
<b>Design to cost goals met for FRP</b>		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 4  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Subsystem Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum subsystem TRL = 9		
All subsystem engineering/design requirements defined, validated and met		
Essentially no engineering changes		
All subsystem physical and functional interfaces defined and validated		
All subsystem manufacturing processes are understood and in control for FRP		
All materials, machines, tooling and test equipment purchased and ready for FRP		
All subsystem quality and reliability levels or targets met		
All subsystem key characteristics met		
All follow up issues from subsystem FRP readiness review or similar type assessment cleared		
All subsystem hardware and software are ready for on time delivery or delivered		
All subsystem cost, quality and reliability targets met		
Failure modes, effects and criticality analyses complete		
Reliability growth program implemented		
Funding in place for reliability growth		
Reliability growth testing implemented		
Funding identified for FRP		
Subsystem developmental tests complete		
Subsystem IOT&E complete		
Safety assessment complete		
Subsystem design to cost goals met for FRP		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 4  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**System Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
<b>Minimum System TRL = 9</b>		
<b>All engineering/design requirements defined, validated and met</b>		
<b>Essentially no engineering changes</b>		
<b>All System physical and functional interfaces defined and validated</b>		
<b>All manufacturing processes are understood and in control for FRP</b>		
<b>All materials, machines, tooling and test equipment purchased and ready for FRP</b>		
<b>All system quality and reliability levels or targets met</b>		
<b>All system key characteristics met</b>		
<b>All follow up issues from system FRP readiness review or similar type assessment cleared</b>		
<b>All subsystem, item and component hardware and software are ready for on time delivery or delivered</b>		
<b>All cost, quality and reliability targets met</b>		
<b>Failure modes, effects and criticality analyses complete</b>		
<b>Reliability growth program implemented</b>		
<b>Funding in place for reliability growth</b>		
<b>Reliability growth testing implemented</b>		
<b>Funding identified for FRP</b>		
<b>System developmental tests complete</b>		
<b>System IOT&amp;E complete</b>		
<b>Safety assessment complete</b>		
<b>System design to cost goals met for FRP</b>		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 5  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Item/Component Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum subsystem TRL = 9		
All item and component engineering/design requirements defined, validated and met		
Item and component engineering changes are made for process or product enhancements		
All item and component physical and functional interfaces defined and validated		
All item and component materials, machines, tooling and test equipment updated, modified or replaced for quality, cost or schedule enhancements		
Item and component manufacturing processes modified or changed for quality, cost or schedule enhancements		
Item and component quality and reliability levels or targets improved beyond 3 sigma		
All item and component key characteristics met or exceeded		
All item and component parts (hardware and software) assessed for cost, quality and performance enhancement		
Item and component reliability growth improvements implemented		
Funding in place for continued reliability growth		
All items and components continue to meet or exceed design to cost goals		
Funding identified for continued production		
Funding identified for item and component spiral improvements or upgrades		
Safety assessment complete for items and components		
Item and component design to cost goals met or exceeded		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 5  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**Subsystem Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum subsystem TRL = 9		
All subsystem engineering/design requirements defined, validated and met		
Subsystem engineering changes are made for process or product enhancements		
All subsystem physical and functional interfaces defined and validated		
All subsystem materials, machines, tooling and test equipment updated, modified or replaced for quality, cost or schedule enhancements		
Subsystem manufacturing processes modified or changed for quality, cost or schedule enhancements		
Subsystem quality and reliability levels or targets improved beyond 3 sigma		
All subsystem key characteristics met or exceeded		
All subsystem items and components (hardware and software) assessed for cost, quality and performance enhancement		
Subsystem reliability growth improvements implemented		
Funding in place for continued reliability growth		
All subsystem items and components continue to meet or exceed design to cost goals		
Funding identified for continued production		
Funding identified for spiral improvements or block upgrades		
Safety assessment complete		
Subsystem design to cost goals met or exceeded		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable

**EMRL 5  
Exit Criteria Requirements  
Assessment Worksheet**

**Assessment Date:**

**System Nomenclature:**

**WBS:**

**Evaluator's Name:**

Status Code Counts		
Green	Yellow	Red

Criteria	Status	Remarks
Minimum System TRL = 9		
All system engineering/design requirements defined, validated and met		
Engineering changes at system level are made for process or product improvements		
All System physical and functional interfaces defined and validated		
Manufacturing processes modified or changed for quality, cost or schedule improvements		
Materials, machines, tooling and test equipment updated, modified or replaced for quality, cost or schedule improvements		
Quality and reliability levels or targets improved beyond 3 sigma		
All system key characteristics met or exceeded		
All subsystems, items and components (hardware and software) assessed for cost, quality and performance improvements		
Reliability growth improvements implemented		
Funding in place for continued reliability growth		
All subsystems, items and components continue to meet or exceed design to cost, quality and performance goals		
Funding identified for continued production		
Reliability growth testing implemented		
Funding identified for spiral improvements or block upgrades		
Safety assessment complete		
System OT&E complete		
Safety assessment complete		
System design to cost goals met or exceeded		

**Status Codes**

- G Green** – Program meets all of the criteria requirements for the specified EMRL assessment and is within cost and schedule.
- Y Yellow** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Exit criteria requirements will be met without impact to cost or schedule.
- R Red** – Program does not meet all of the criteria requirements for the specified EMRL assessment. Meeting exit criteria requirements will impact cost or schedule.
- NA** Criteria Not Applicable