Software Acceptance Testing

What is it and why we do it

4 May 2016

SGIST Presentation

Jack Davis

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Software is everywhere

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OOPS

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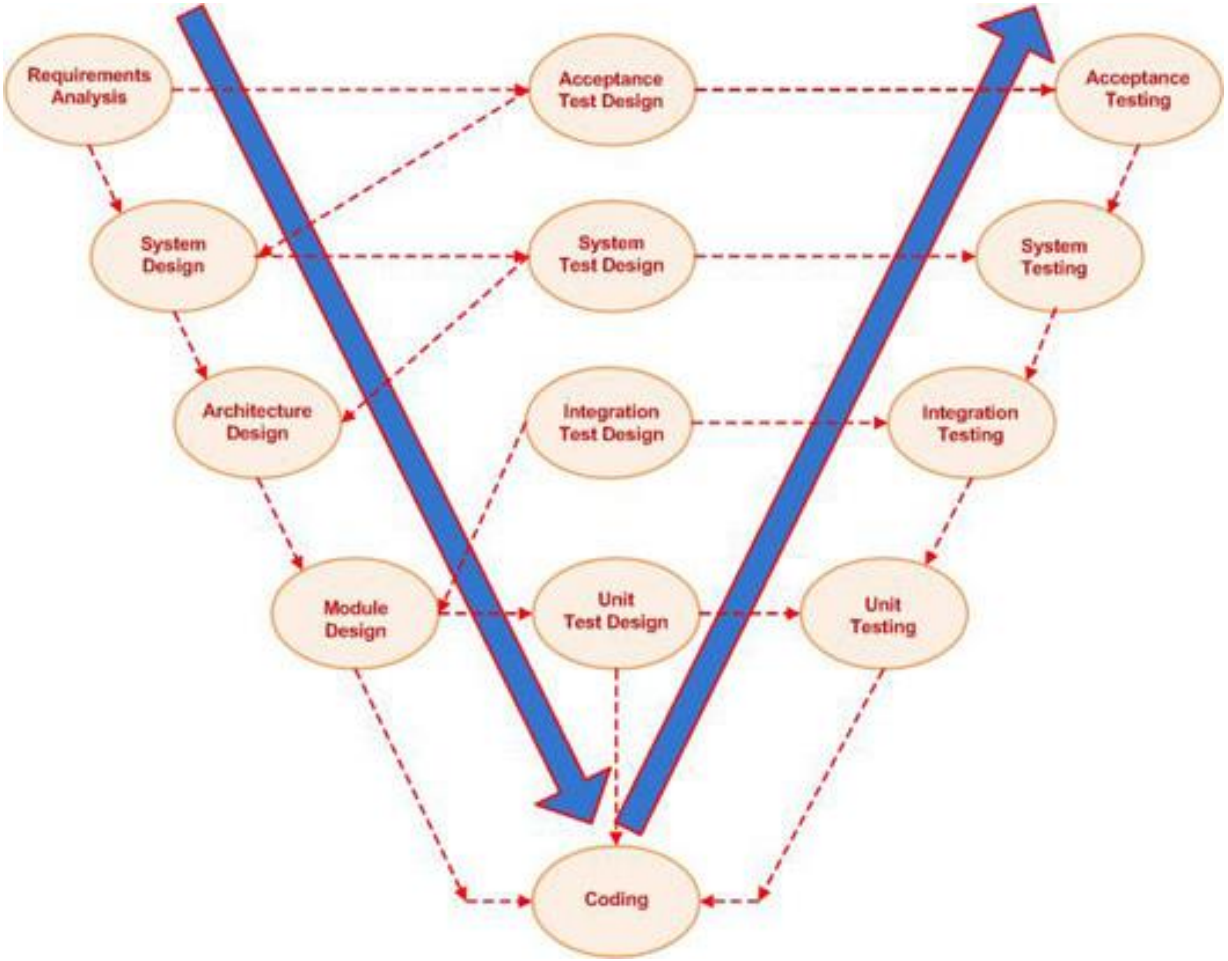
V Model



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Unit Testing

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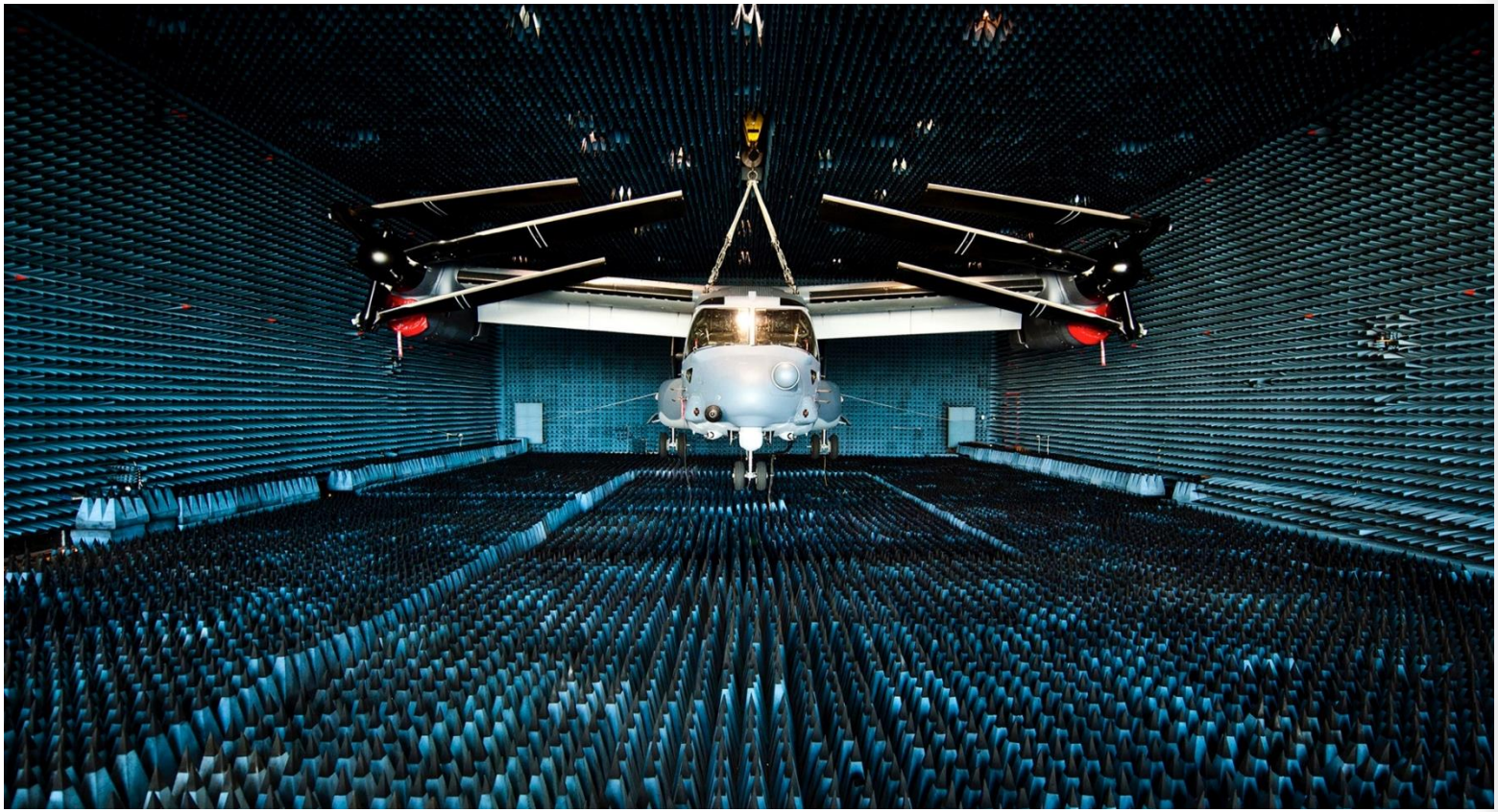
Integration Testing



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Two Hats

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Verification and Validation

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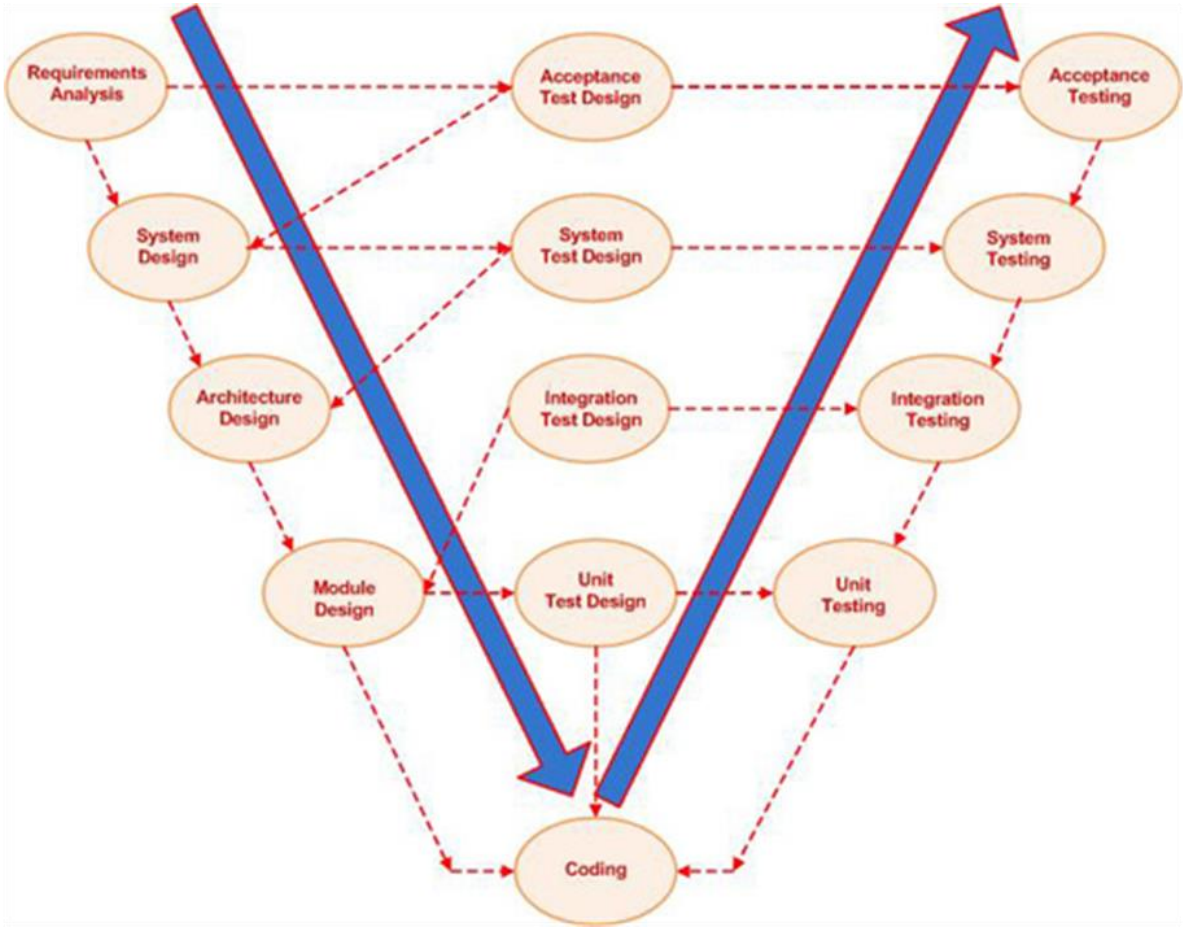
Requirements Analysis



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System Requirements

- *SYS-1024 The design of the wardroom latch mechanism shall be designed so that the door can be opened with one hand.*
- *SYS-1025 The design of the wardroom latch mechanism shall be designed so that the door can be opened with a torque of no more than 30 Newton Metres.*

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Recipe for Great Reqs

- *Unambiguous*
- *Testable*
- *Correct*
- *Understandable*
- *Feasible*
- *Independent*
- *Atomic*
- *Necessary*
- *Implementation-free*

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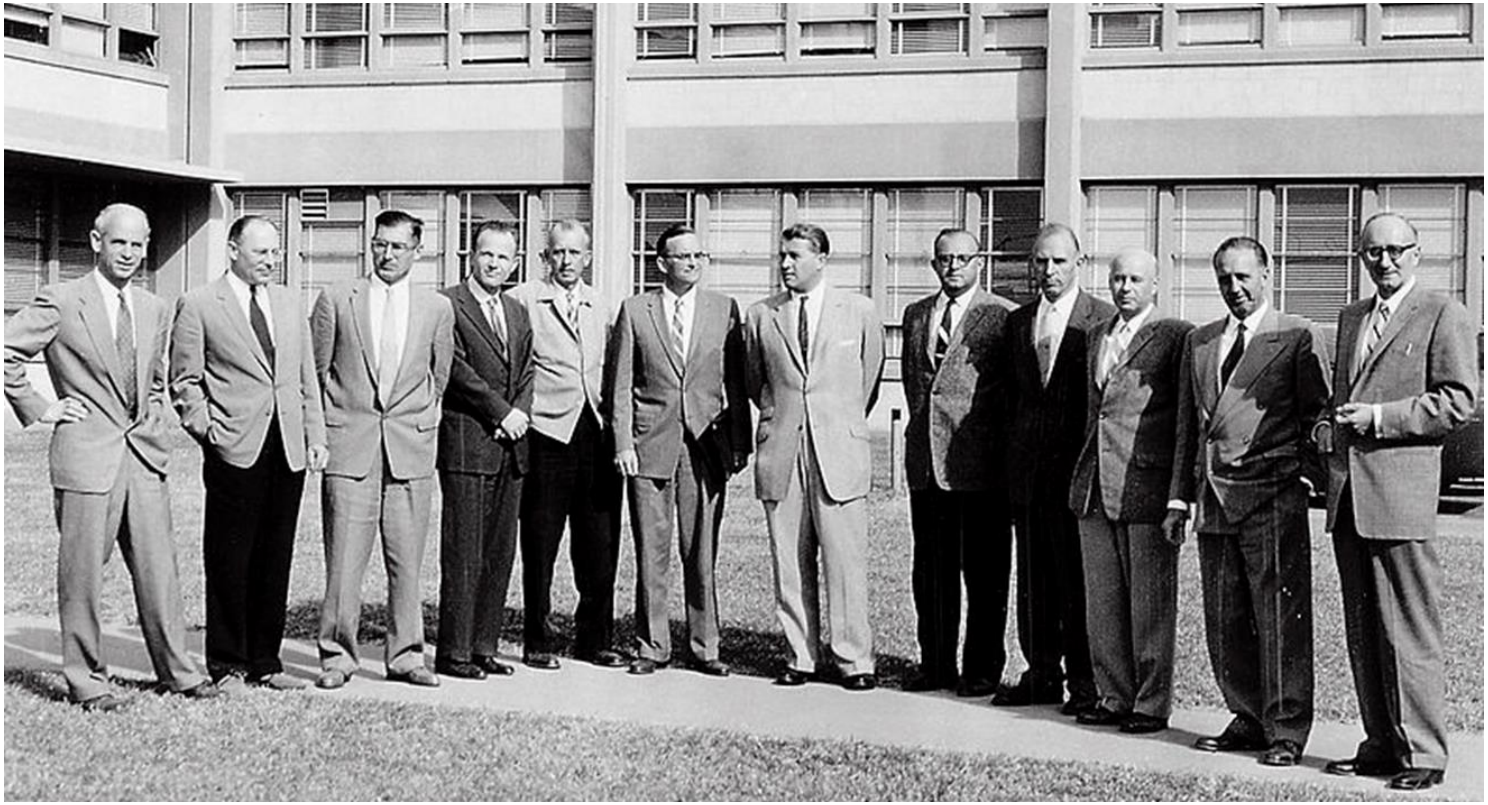
It's a Team Effort



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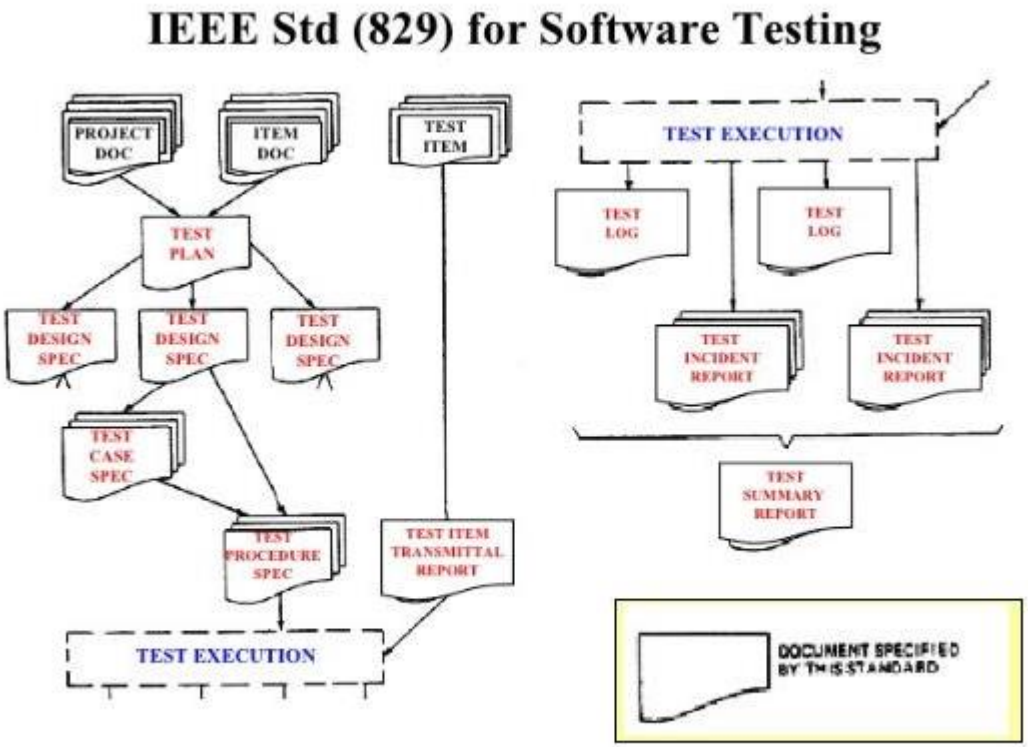
Test Documentation



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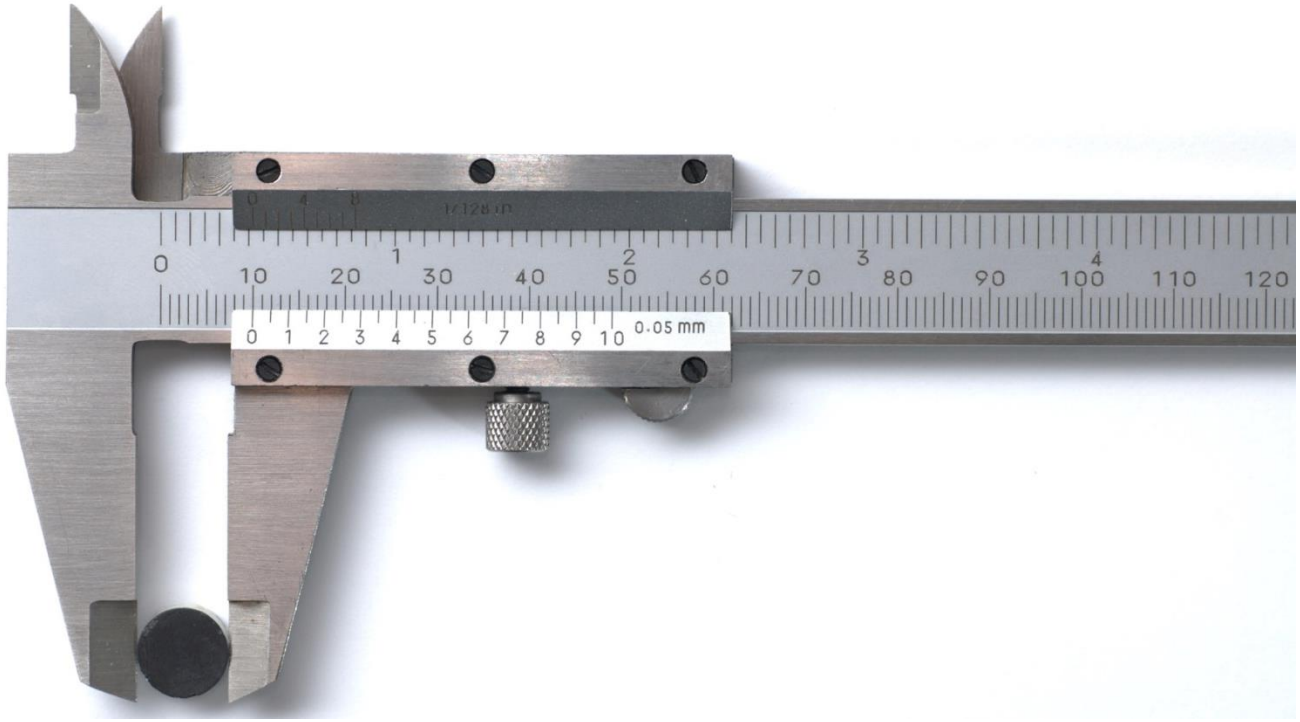
Test Verification Method



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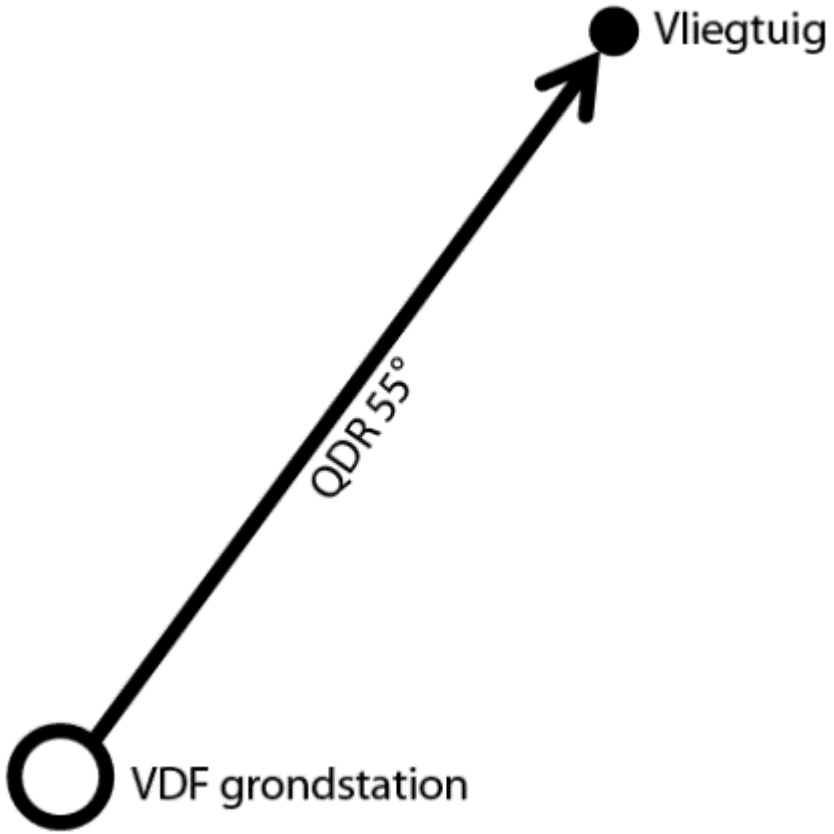
Demonstration VM



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Inspection VM

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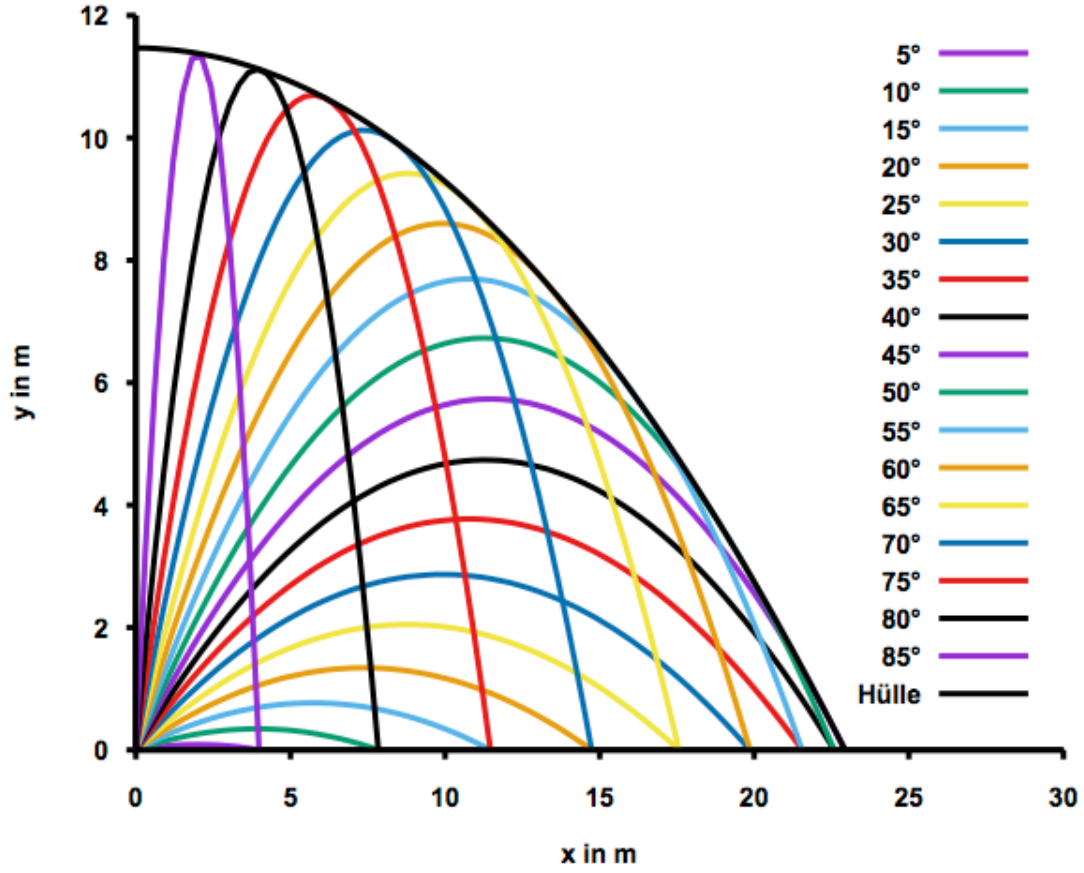
Analysis VM



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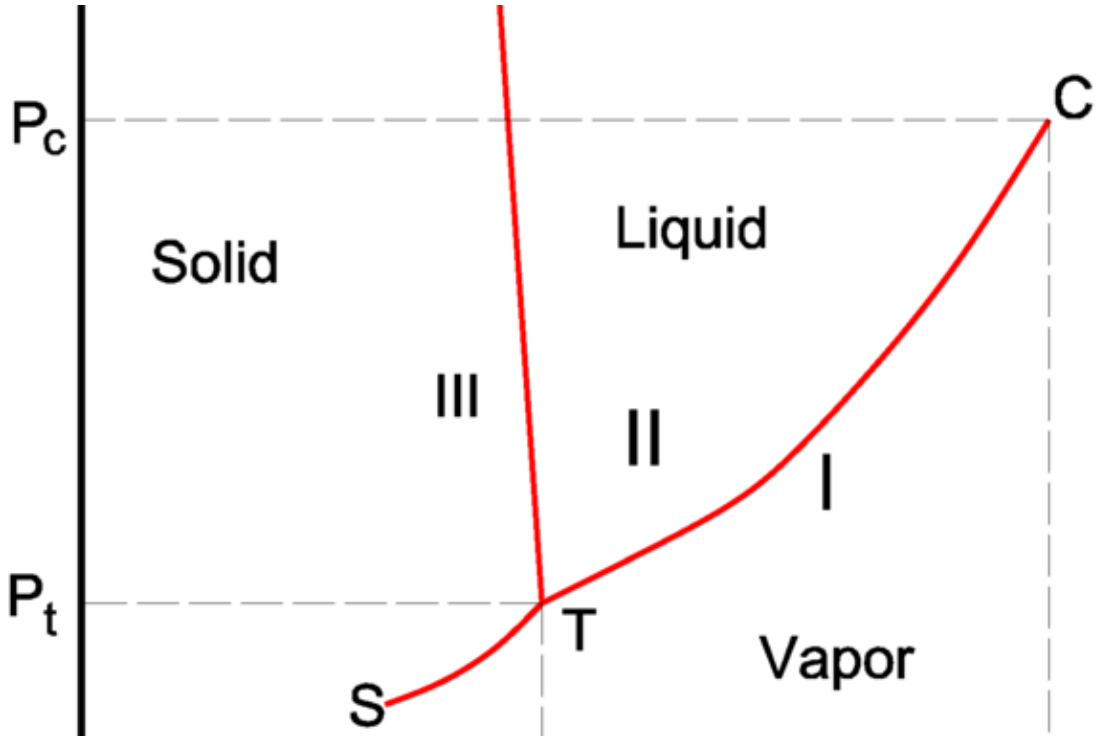
Phases



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Verification Cross Reference

VCRM for Starship Excalibur
Document: NCC-1708 Version 1.2

Req	Req Text	Phase	Type	Method
SYS-1535	The warp nacelles shall be large enough to accommodate a type 74 warp drive.	FAT	Analysis	Analyse the design documents for the warp drive and show that the nacelle dimensions are sufficient to accommodate the drive.
SYS-1536	The materials used in the warp nacelle but be resistant to neutron activation.	DES1	Test	Test by showing that the nacelle material meets Star Fleet standard 18701-94 2216
SYS-1537	The end caps of the warp nacelle must allow the creation of a warp field of at least 2500 Cochranes.	FAT	Demonstration	Demonstrate by running the warp test assembly to at least 2500 Cochranes and show that no temporal anomalies are observed during the test
SYS-1538	All molecular joiners shall be certified to deep space environment class 5 via the C-tick certification programme.	SAT3	Inspection	Inspect design documents to show that the molecular joiners are C-Tick certified.

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Test Plans

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Test Procedures

Acceptance Test Procedure
Roadrunner Manufacturing Model 42 Version 17.6

Step	Action	Expected Result	Pass/Fail	Comments
125	Coyote advances throttle to maximum	Engine speed increases to maximum governed speed		
126	Coyote pull back on stick	Aircraft pitches up steeply		
127	Coyote move yoke to maximum left setting	Aircraft banks left steeply		
128	Once aircraft attitude is inverted, move throttle to minimum.	Aircraft enters flat spin.		
129	Attempt recovery.	Recovery impossible from current configuration.		Roadrunner wins again.

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Redline Markups

Acceptance Test Procedure
Roadrunner Manufacturing Model 42 Version 17.6

Step	Action	Expected Result	Pass/Fail	Comments
125	Coyote advances throttle to maximum	Engine speed increases to maximum governed speed	P	
126	Coyote pull back on stick	Aircraft pitches up steeply	P	
127	Coyote move yoke to maximum left setting	Aircraft banks left steeply	P	
128	Once aircraft attitude is inverted, move throttle to minimum.	Aircraft enters flat spin.	P	
129	Attempt recovery.	Recovery impossible from current configuration.	P	Roadrunner wins again.
130	Deploy emergency parachute	Aircraft is saved		

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Test Reports

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QUESTIONS?

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