

# ISO 23135:2022-03 (E)

## Space systems - Verification programme and management process

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions and abbreviated terms .....</b>	<b>1</b>
<b>3.1</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>3.2</b>	<b>Abbreviated terms .....</b>	<b>2</b>
<b>4</b>	<b>Requirements for space system verification management processes .....</b>	<b>3</b>
<b>4.1</b>	<b>General .....</b>	<b>3</b>
<b>4.2</b>	<b>VM process 1: requirement flow-down and establishment of specification .....</b>	<b>3</b>
<b>4.2.1</b>	<b>General .....</b>	<b>3</b>
<b>4.2.2</b>	<b>Specification requirements and review .....</b>	<b>4</b>
<b>4.2.3</b>	<b>Data supporting verification method and approach .....</b>	<b>5</b>
<b>4.3</b>	<b>VM process 2: verification cross-reference matrix (VCRM) .....</b>	<b>5</b>
<b>4.3.1</b>	<b>Cross-reference of specification requirements and verification method .....</b>	<b>5</b>
<b>4.3.2</b>	<b>VCRM for the space system and lower level systems .....</b>	<b>5</b>
<b>4.3.3</b>	<b>Verification by analysis .....</b>	<b>5</b>
<b>4.3.4</b>	<b>Verification by test .....</b>	<b>5</b>
<b>4.3.5</b>	<b>Verification by inspection and demonstration .....</b>	<b>6</b>
<b>4.4</b>	<b>VM process 3: integration and test (I&amp;T) process .....</b>	<b>6</b>
<b>4.4.1</b>	<b>General .....</b>	<b>6</b>
<b>4.4.2</b>	<b>Review of I&amp;T plans for the space system and lower level systems .....</b>	<b>6</b>
<b>4.4.3</b>	<b>Space system and lower-level I&amp;T sequence and test environments .....</b>	<b>6</b>
<b>4.4.4</b>	<b>Operational tests for space system .....</b>	<b>6</b>
<b>4.4.5</b>	<b>Test readiness review (TRR) and entry/exit criteria .....</b>	<b>6</b>
<b>4.4.6</b>	<b>Test discrepancy resolution and retest .....</b>	<b>7</b>
<b>4.4.7</b>	<b>Test summary and "as tested" data review .....</b>	<b>7</b>
<b>4.4.8</b>	<b>I&amp;T plans for launch site operations for each element .....</b>	<b>7</b>
<b>4.4.9</b>	<b>I&amp;T plans for launch site operations for integrated system .....</b>	<b>7</b>
<b>4.5</b>	<b>VM process 4: specification verification ledger (SVL) process .....</b>	<b>7</b>
<b>4.5.1</b>	<b>General .....</b>	<b>7</b>
<b>4.5.2</b>	<b>SVL content .....</b>	<b>7</b>
<b>4.5.3</b>	<b>SVL documentation .....</b>	<b>8</b>
<b>4.5.4</b>	<b>Subcontractor/vendor SVL plans for the space system element including subsystems, and units .....</b>	<b>8</b>
<b>4.6</b>	<b>VM process 5: acceptance and delivery review process .....</b>	<b>8</b>
<b>4.6.1</b>	<b>General .....</b>	<b>8</b>
<b>4.6.2</b>	<b>Space system and lower level systems acceptance and delivery review data package .....</b>	<b>8</b>
<b>4.6.3</b>	<b>Acceptance and delivery review plans for the systems developed by subcontractors/vendors .....</b>	<b>8</b>
<b>4.6.4</b>	<b>FCA and PCA summary as a part of acceptance package .....</b>	<b>8</b>
<b>4.6.5</b>	<b>Acceptance/delivery review entry/exit criteria .....</b>	<b>9</b>
<b>4.7</b>	<b>VM process 6: verification-related risk and issue/watch list management process .....</b>	<b>9</b>
<b>4.7.1</b>	<b>General .....</b>	<b>9</b>
<b>4.7.2</b>	<b>Status tracking of verification-related issue and concern items .....</b>	<b>9</b>
<b>4.7.3</b>	<b>Reporting of verification-related issues to the programme risk management board .....</b>	<b>9</b>

4.7.4	Verification-related risk and issue/watch list management plans for the space system and lower level systems including those developed by subcontractors/vendors .....	9
5	Requirements for space systems verification programme management .....	9
5.1	General .....	9
5.2	Verification programme managed by each WBS element .....	9
5.3	Integration of distributed verification programme .....	10
5.4	Verification programme review .....	10
5.5	Verification programme flow-down to subcontractors and vendors .....	10
5.6	Verification activities coordinated with other review boards .....	10
5.7	Validation of the verification process .....	10
5.7.1	General .....	10
5.7.2	DT&E and OT&E support .....	10
5.7.3	Independent readiness review (IRR) and launch readiness review (LRR) support .....	10
5.8	Verification plan .....	11
5.8.1	General .....	11
5.8.2	Review of verification plans .....	11
6	Use of verification management for late changes and heritage/commercial systems .....	11
6.1	General .....	11
6.2	Late change verification management .....	11
6.2.1	Verification of late changes utilizing VM processes 1 through 6 .....	11
6.2.2	Late change categories .....	12
6.3	Heritage/commercial systems verification management .....	12
6.3.1	General .....	12
6.3.2	Heritage/commercial hardware and software applications .....	12
6.3.3	Verification of heritage hardware and software .....	13
Annex A (informative)	Exemplar space system and an example of WBS-based verification management structure .....	14
Annex B (informative)	Review of verification plans for space system and lower system level, including those developed by subcontractors/vendors .....	15
Annex C (informative)	Deliverable/review documents associated with each verification management process .....	20
Annex D (informative)	of specification verification ledger (SVL) .....	22
Annex E (normative)	Recommended Check List for Planning and Executing Late Changes, Heritage, or Commercial System Applications .....	24
Bibliography	.....	28