

**Table of contents**

---

- Foreword .....4**
- Introduction.....4**
- 1 Scope.....6**
- 2 Normative references .....7**
- 3 Terms, definitions and abbreviated terms.....8**
  - 3.1 Terms from other standards.....8
  - 3.2 Terms specific to the present standard .....8
  - 3.3 Abbreviated terms.....9
- 4 The OBCP concept .....11**
  - 4.1 Introduction.....11
  - 4.2 Stakeholders and application areas for OBCPs .....11
    - 4.2.1 Stakeholders .....11
    - 4.2.2 Domains of OBCP application .....12
  - 4.3 Types of OBCP .....13
  - 4.4 The OBCP system .....14
- 5 OBCP system capabilities .....17**
  - 5.1 OBCP structure .....17
  - 5.2 OBCP language capabilities .....18
    - 5.2.1 Introduction .....18
    - 5.2.2 General .....18
    - 5.2.3 Data types.....18
    - 5.2.4 Declarations .....19
    - 5.2.5 Assignments .....19
    - 5.2.6 Expressions .....19
    - 5.2.7 Flow controls.....20
    - 5.2.8 Waits.....20
    - 5.2.9 External interactions.....21
    - 5.2.10 Contingency handling.....22
  - 5.3 The OBCP preparation environment.....22

5.3.1	OBCP script preparation .....	22
5.3.2	Syntax analysis, consistency, dependency and constraint checking .....	23
5.3.3	Report generation .....	23
5.3.4	Verification and validation .....	23
5.3.5	OBCP characterisation.....	24
5.4	The OBCP execution environment.....	25
5.4.1	Ground capabilities .....	25
5.4.2	OBCP monitoring and control.....	25
5.4.3	OBCP integrity .....	28
5.4.4	On-board capabilities .....	28
<b>6</b>	<b>OBCP engineering processes .....</b>	<b>33</b>
6.1	Introduction.....	33
6.2	Overall management process of the OBCP system .....	34
6.2.1	Management process.....	34
6.2.2	OBAP vs. OBSW: criteria and trade-off analysis .....	37
6.2.3	OBOP vs. ground-based operations.....	38
6.2.4	Trade-off between OBCP engine capability and engineering effort .....	39
6.2.5	Overall organization and management.....	39
6.3	OBCP engineering.....	40
	<b>Bibliography.....</b>	<b>41</b>
<b>Figures</b>		
	Figure 4-1 The OBCP system.....	15
	Figure 5-1: OBCP state diagram .....	26
	Figure 6-1: Lifecycles of OBCPs originating from the different domains .....	34
	Figure 6-2: OBCP management overview .....	36
	Figure 6-3: Synchronisation of OBAP lifecycles with system and OBSW lifecycles .....	36