|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

|  | Name | **Role/Title** |
| --- | --- | --- |
| **Owner** | Srdjan Vareskic | Mechanical Engineer, Target Division |
| **Reviewer** | Kristoffer Sjögreen | Mechanical Engineer, Target Division |
| **Approver** | Ulf Odén | Work Package Manager for Target Systems, Target Division |
| Magnus Göhran | Work Package Manager for Remote Handling Systems, Target Division |

DOCUMENT REVISION HISTORY

| Revision | Reason for and description of change | Author | Date |
| --- | --- | --- | --- |
| 1 | First issue | Srdjan Vareskic | 2014-12-04 |
| 2 | New template implemented in the document | Srdjan Vareskic | 2016-04-27 |
|  |  |  |  |

|  |  |
| --- | --- |
| Table of content |  |

DOCUMENT REVISION HISTORY 2

1. INTRODUCTION 4

1.1. Purpose of the document 4

1.2. List of Abbreviations 4

2. CHARACTERISTICS OF THE INTERFACE BETWEEN THE REMOTE HANDLING SYSTEMS AND THE TARGET SYSTEMS 5

2.1. Responsibilities between the Remote Handling Systems and the Target Systems 5

2.1.1. Remote Handling Systems responsibilities 5

2.1.2. Target Systems responsibilities 6

3. INTERFACE REQUIREMENTS 7

4. REFERENCES 8

# INTRODUCTION

## Purpose of the document

The Interface Control Document (ICD) exhaustively describes the interfaces between the Target Systems WBS 12.2 and the Remote Handling Systems WBS 12.6 within the Target Station. It is an agreed specification of the interface between the two systems. It is formally approved by the two system owners and once approved, it is placed under configuration control. As such, it is managed in accordance with the ESS Change Control Process [1] and the ESS Configuration Management Plan [2].

## List of Abbreviations

| Abbreviation | Definition |
| --- | --- |
| ICD | Interface Control Document  |
| ICD-RTSRHS | Interface Requirements DocumentTarget SystemsRemote Handling Systems |
|  |  |

# CHARACTERISTICS OF THE INTERFACE BETWEEN THE REMOTE HANDLING SYSTEMS AND THE TARGET SYSTEMS

The interface between the Remote Handling System and the Target Systems consists of the link between their sub-systems. The Active Cells WBS 12.6.2, the Casks and Associated Handling Devices WBS 12.6.4 and the Mock-up and Test Stands WBS 12.6.5.2 are three sub-systems of the Remote Handling Systems that has an interface with the Target Wheel WBS 12.2.2 and the Target Drive and Shaft WBS 12.2.3 of the Target Systems, as described by Figure 1. The purpose and overview of the interacting sub-systems of the RHS and the TS are described in the Requirements and Description documents [3] and [4].

WBS 12.6.5.2 – Mock-up and Test Stands

WBS 12.6.4 – Casks and Associated Handling Devices

**WBS 12.2 – TARGET SYSTEMS**

**WBS 12.6 – REMOTE HANDLING SYSTEMS**

WBS 12.2.2 – Target Wheel

WBS 12.6.2 - Active Cells

WBS 12.2.3 - Target Drive and Shaft

A

A - Interface Requirements Document: ESS-0030244

B - Interface Requirements Document: ESS-0030245

C - Interface Requirements Document: ESS-0031742

B

C

*Figure 1 - Interface between RHS and TS sub-systems*

## Responsibilities between the Remote Handling Systems and the Target Systems

### Remote Handling Systems responsibilities

1. Based on input from the interface, ensure that the spent components from the Target Systems, relevant for treatment in the Active Cells facility, can be transported by a shielded cask to the Active Cells facility where it will be processed, interim stored and shipped of-site.
2. The Mock-up and Test stand facility will provide possibilities to do handling procedure training on Target Systems components as well as provide the possibility for component testing.

### Target Systems responsibilities

1. Provide structural dimensions of spent components
2. Provide information about spent components weight
3. Provide information about spent components radiation, contamination grade as well as the decay information
4. Provide information about material composition of the spent components
5. Provide information about heat loads of spent components
6. Provide information about spent components condition
7. Provide requirements on Mock-up and Test stands

# INTERFACE REQUIREMENTS

Interface requirements between the Remote Handling Systems and the Target Systems is described in three documents as illustrated in Figure 1.

1. ICD-R: Active Cells – Target Systems, ESS-0030244,
2. ICD-R: Casks and Associated Handling Devices – Target Systems, ESS-0030245,
3. ICD-R: Mock-up and Test stand – Target Systems, ESS-0031742.

# REFERENCES

1. Change Control Process, ESS-0001879
2. Configuration Management Plan, ESS-0003688
3. Target System-Active Cells [WBS 12.6.2], ESS-0011030
4. Target Wheel, Drive and Shaft (WBS 12.2.2 and 12.2.3) System Requirements and description, ESS-0020435