AEROSPACE INFORMATION REPORT

AIR6517™	REV. A
Issued 2016-12 Stabilized 2024-02 Superseding AIR6517	

Unmanned Systems (UxS) Control Segment (UCS) Architecture:
Rhapsody Version of UCS ICD Model

RATIONALE

This document is no longer part of UCS Architecture as of Revision A.

STABILIZED NOTICE

This document has been declared “STABILIZED” by SAE AS-4UCS Unmanned Systems Control Segment Architecture Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AIR6517A/

FOREWORD

The Unmanned Systems (UxS) Control Segment (UCS) Architecture is described in AS6512 UxS Control Segment (UCS) Architecture: Architecture Description.

This User Guide describes the content of the Rhapsody version of the UCS Architectural ICD Model and how to use this model within the Rhapsody modeling tool environment.

1. SCOPE

This User Guide describes the content of the Rhapsody version of the UCS Architectural Model and how to use this model within the Rhapsody modeling tool environment.

The purpose of the Rhapsody version of the UCS Architectural Interface Control Document (ICD) model is to provide a model for Rhapsody users, derived from the Enterprise Architect (EA) model (AIR6515).

The AIR6515 EA Model, and by derivation, the AIR6517 Rhapsody Model, have been validated to contain the same content as the AS6518 model for:

- all UCS ICD interfaces
- all UCS ICD messages
- all UCS ICD data directly or indirectly referenced by ICD messages and interfaces
- the Domain Participant, Information, Service and Non-Functional Properties Models

2. REFERENCES

There are no references publications specified herein.

3. DIFFERENCES COMPARED WITH THE UCS ARCHITECTURE AS6518 MODEL

Compared with AS6518 Model, the AIR6517 Rhapsody Model:

- does not include the full EA Conceptual Data Model, which contains some elements that are only referenced during elaboration of non-UCS message sets
- does not include the EA Use Case System Model, which is not a normative part of the AIR6514 UCS Interface Control Document (ICD)
- does not include Refinements elements or elements of the ICD that are not directly or indirectly referenced by UCS messages
- modifies association end role names required for navigable association ends
- sets navigability correctly for association ends without role names

The AIR6515 EA Model was produced per the *Model Interchange Guide (UCS-G-MIG)*, an internal committee process document, and was validated per those processes so that the AIR6517 Rhapsody Model content is equivalent to the corresponding AS6518 Model content.

In the AS6518 Model there are two sets of interfaces, one set of interfaces in the Domain Participant Model references messages that use Conceptual Data Model elements and the other set of interfaces in the ICD references UCS logical messages and data model elements. In AIR6515 EA Model, both sets of interfaces would be identical, so only the Domain Participant Model interfaces are provided.

Figure 1 shows how AIR6515 relates to other UCS Architecture products.

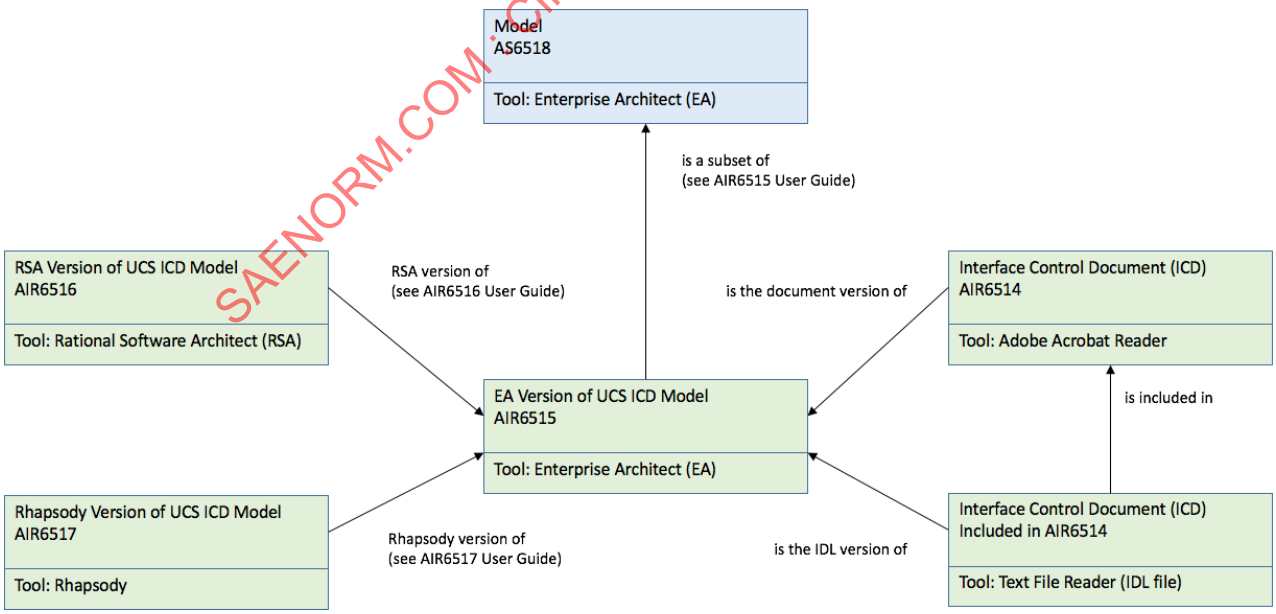

Figure 1 - Relationships among SAE products

4. RELATIONSHIP TO AIR6515 EA AND AIR6516 RSA MODELS

The AIR6517 Rhapsody Model is meant to be the same model as those ICD models provided for Enterprise Architect and Rhapsody. Figure 2, excerpted from the UCS Model Interchange Guide (UCS-G-MIG), shows how AIR6515 is used to produce the AIR6516 and AIR6517 products.

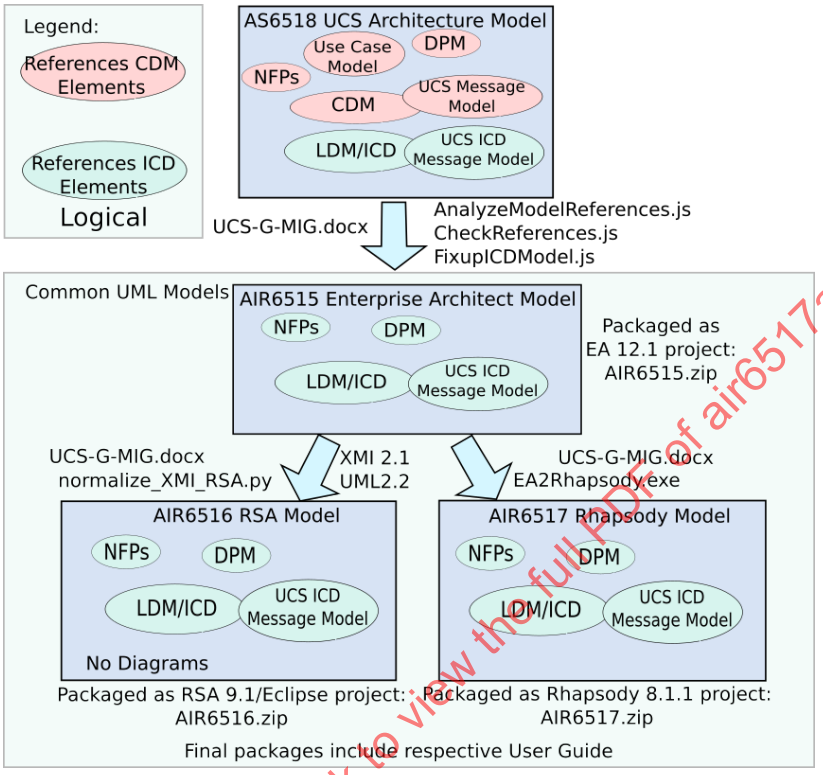

Figure 2 - Workflow for generating model products

5. CONTENT OF THE AIR6517 RHAPSODY MODEL

Figure 3 describes the content of the upper level package structure. In Rhapsody this structure is laid out in alphabetical order so it will not be in the exact same order as the EA Model. Also note that since the order is arbitrary there is no special meaning implied. The next sections will provide screen shots of the lower level package structure and a brief explanation of each.

The UCS Working Group Release 3.4 of the UCS Architecture used the part number **UCS-INF-ICD-RPY** for this product, and that old part number is still used in the SAE re-publication of the Release 3.4 Architecture.

5.1 UCSArchitecturalModel

The UCSArchitecturalModel package contains the AIR6515 EA Model's Domain Participant, Information, and Service Contract and Non-Functional Property Models.

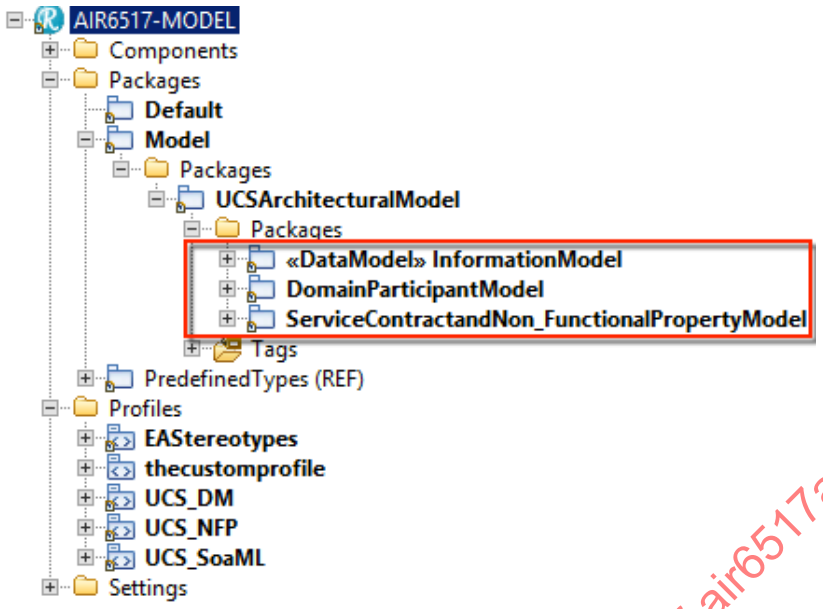

Figure 3 - Top-Level package structure

5.2 DomainParticipantModel

The DomainParticipantModel contains the definitions of the UCS ServiceInterfaces and the interfaces that they use and realize to provide services.

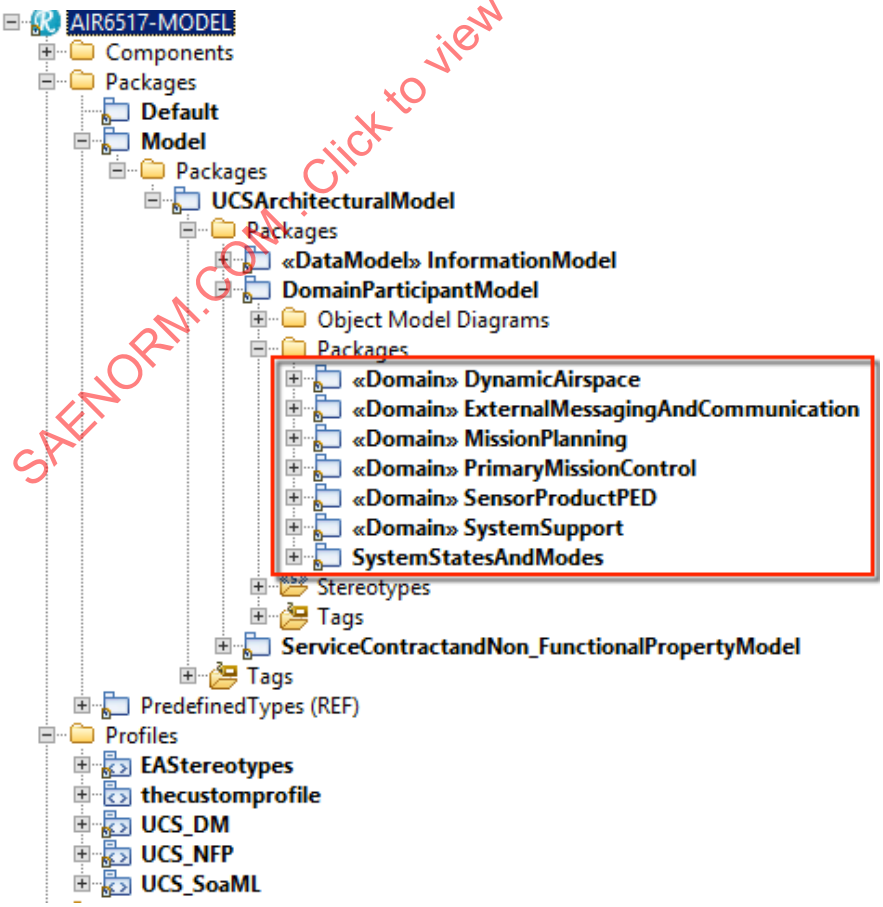

Figure 4 - Domain Participant Model

5.3 InformationModel

The InformationModel contains the same content as the AIR6515 EA Model's Information Model package. This includes the DataProducts and LogicalDataModel packages.

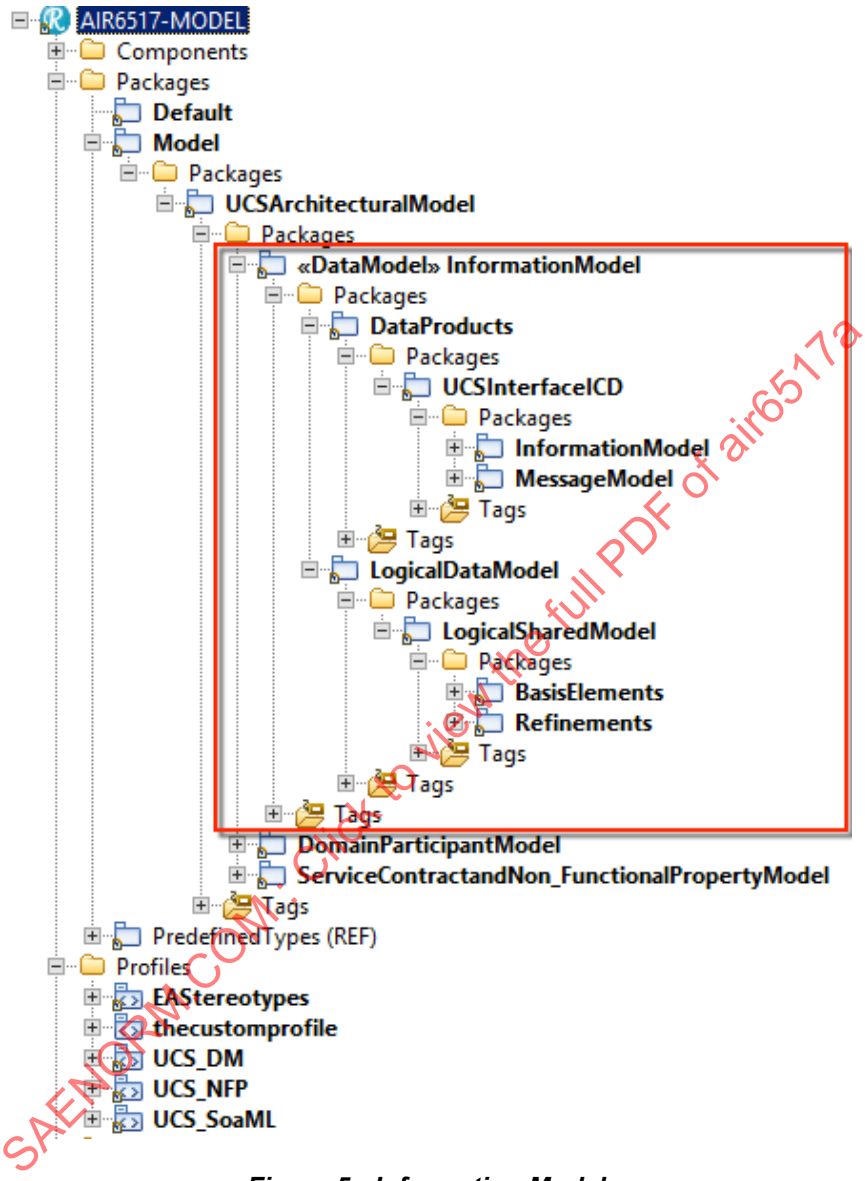

Figure 5 - Information Model

5.4 ServiceContractandNon_FunctionalPropertyModel

This Model contains the same information as the AIR6515 EA Model's package, including NFP libraries for Safety, Security, and QoS.