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Doc.-Title:	**Aeolus Level 2B Processor External Interface Control Document**
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0.1 Document Change Log

Issue.	Date	New pages	Modified pages	Observations	Name
V 0.1	21.08.06	--	--	draft	Huber/Tan
1.0	11.12.06			Minor clarifications from GSDR RIDS 163 and 315.	Huber/Tan
1.1	23.02.07			Update Figure 3-1 and File_Types in Sec 4.3.2/4.3.5. Minor editorials elsewhere.	Tan
1.2	15.06.07			Report FileType corrected to ALD_REP_2B	Tan
1.32	16.01.08			Clarifications for JobOrder parameters. Removal of FileType ALD_U_R_2B (GSDR RID 163).	Tan

0.2 Table of Contents

1 Introduction and Purpose of Document

The present document is the External Interface Control Document for the ADM L2B operational processor.

This document describes the interfaces between the Aeolus L2B Late-Processor (L2BP-LP, the LTA version of the L2B Processor for late- and re-processing) and the rest of the Aeolus Core Payload Data Segment. The interfaces are based on the PDS-IPF-ICD Generic Interface Guidelines, [AD 1].

Chapter two contains the list of applicable and referenced documents and a list of acronyms, and chapter 3 briefly describes the L2B-LP processor system context. Chapter 4 describes the interface that consists of a set of files. The interface exchange between the L2B processor and the PDS Thin Layer is shown in chapter 5 and in Annex A a set of example XML interface files is given, and Annex B shall list the complete set of error messages issued by the L2BP in future versions of this document.

2 Documents

2.1 Applicable Documents

[AD 1] PDS-IPF ICD Generic Interface Guideline, Issue 2.2, 01/08/2006, **ESA-ID-ACS-GS-0001**

2.2 Reference Documents

[RD 1] ADM-Aeolus Level 2B Processor Design Document, Issue 1.0, 23/02/2007, **AE-DD-ECMWF-L2BP-001**. See also Definition of Baseline Aeolus Level-2B Processing, Issue 1.2, 09/09/2005, **AE-TN-ECMWF-L2P-0022**

[RD 2] ADM-Aeolus Level 2B Processor Software User's Manual, Issue 1.32, 16/01/2008, **AE-MA-ECMWF-L2BP-001**

[RD 3] ADM-Aeolus Level-2B/2C Processor Input/Output Data Definitions Interface Control Document, Version 1.32, 16/01/2008, **AE-IF-ECMWF-L2BP-001**

[RD 4] Deleted.

[RD 5] Aeolus Level 1b Processor and End-to-End Simulator: Input/Output Data Definitions Interface Control Document, Issue 3/4(draft), 14/01/2008, **ADM-IC-52-1666**

[RD 6] ADM-Aeolus Rayleigh-Brillouin Correction Look-up Tables Generator Input/Output Data Definitions Interface Control Document, Version 1.2, 15/06/2007, **AE-TN-MFG-GS-0003**

[RD 7] Aeolus Level 2a Processor External Interface Control Document, Version 1.4, 17/01/2007, **AE-IF-DLR-L2A-001**

[RD 8] Aeolus Level 2a Processor Input/Output Data Definition, Version 1.3, 17/01/2007, **AE-IF-DLR-L2A-004**

2.3 Acronyms

ADM-Aeolus	Atmospheric Dynamics Mission: Aeolus keeper of the winds
ARF	Archive Facility
FEP	Front End Processor
LF	Log File
LTA	Long Term Archive
L2BP	Level 2B Processor
L2B-LP	Instance of the L2BP installed in the Core PDS for late- and re-processing
MCF	Monitoring and Control Facility
PCF	Processor Configuration File
PDS	Payload Data Segment
PLF	Product List File
PRF	Product Report File
TL	Thin Layer
TTF	Task Table File

WCF	Workstation Configuration File
XML	Extensible Mark up Language

3 L2B Processor System Context

The L2B late-processor (L2B-LP) will be integrated at the Payload Data Segment Long Term Archive (PDS LTA) for the Aeolus mission. The LTA site is composed of several facilities supporting in particular archiving, inventory, data dissemination and reception functions as well as the various Aeolus processors. The L2B-LP is an instance of the L2B Processor that resides within the Core PDS (nominally the LTA) for the purposes of late processing (and potentially re-processing). The L2B-LP should not be confused with the operational L2B Processor which resides at ECMWF.

The interfaces between the L2B-LP and these other components are provided through the PDS "Thin Layer" (TL). The Thin Layer is responsible for collecting from the other PDS components all data and parameters needed for the L2B-LP to process a Job Order, and, after completion of a Job Order, collecting from the L2B-LP all the data and results produced to provide to the other PDS components. The L2B-LP has interfaces only with the PDS Thin Layer, and does not interface with any of the other PDS facilities directly.

The interfaces to the L2B-LP and its relationship to the PDS Thin Layer are shown in the Aeolus L2B Late-Processor context diagram.

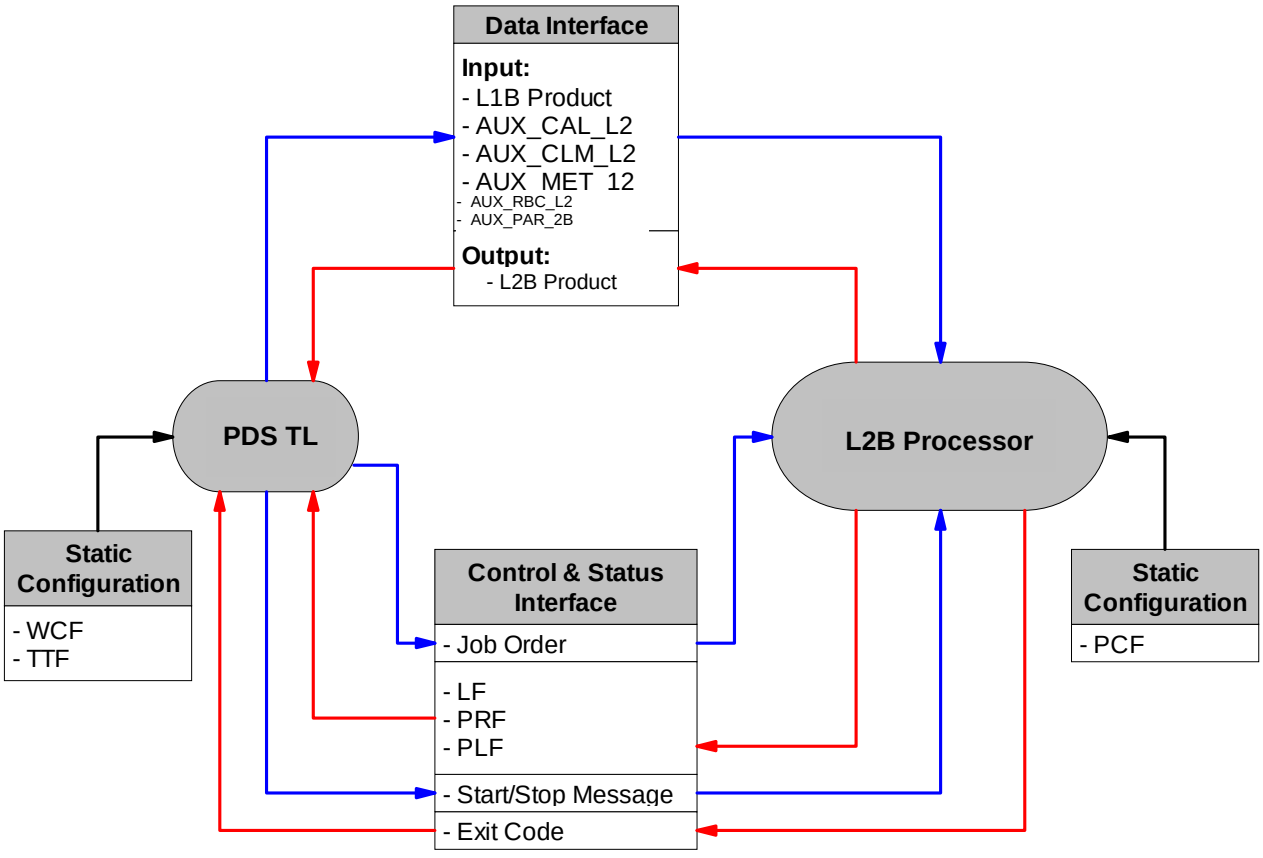

Figure 3-1 L2B Late-Processor System Context. The Static Configuration Files are a set of files that are not interfaces shared between the TL and the L2B-LP, but are provided as part of the L2B-LP installation. These files include the Workstation Configuration File (WCF), Task Table File (TTF), and Processor Configuration File (PCF), and are described in 4.1.

The interfaces between the L2B-LP and TL shown in Figure 3-1 can be divided into two general categories, which are described in 4.2 and 4.3:

Control and Status Interface: The Thin Layer uses these interfaces to start and stop the L2B-LP, and determine its status. They include the Job Order, Start/Stop Process, Exit Code, Log File (LF), Product Report File (PRF) and Product List File (PLF) interfaces.

Data Flow Interfaces: These interfaces represent the parameter files, input data and output data passed between the TL and the L2B-LP. They include the L1B Product, Auxiliary Rayleigh-Brillouin Correction Data (AUX-RBC), Auxiliary Climatological Data (AUX-CLM), Auxiliary Calibration Data (AUX-CAL), Auxiliary Meteorological Data (AUX-MET), and Auxiliary Processing Parameters (AUX-PAR) as input to the L2B-LP and the L2B Product as output of the L2B-LP.

4 Interface File Descriptions

This section describes the interfaces between the Aeolus L2B Late-Processor and the PDS Thin Layer.

4.1 Static Configuration Files

The interfaces described in this section are static files provided to the PDS Thin Layer as part of the installation of the Aeolus L2B Late-Processor. These files describe for the Thin Layer the structure and operation of the L2B-LP.

4.1.1 Workstation Configuration File

The Thin Layer interface requires the L2B-LP workstation to be provided with a number of L2B-LP configurations where each configuration is capable of performing a specific data processing scenario characterized by a specific order-type in the Workstation Configuration File. By default the L2B-LP expects the order-type "RPRO" (meaning "Reprocess"). Other order-types may also be declared by adding them to the Workstation Configuration File but the order-type character string must be precisely 4 characters in length (this is because the order-type is used to determine the File_Class of the output L2B product and its filename). A further order-type "OFFL" is currently valid, for the purposes of interfacing to the L1bP Report Generator, but this may be deprecated in future. For the current version of the L2B-LP, all order-types are processed in the same way.

The Workstation Configuration File interface is an XML file used by the Thin Layer to determine what kind of Job Orders can be processed on the L2B-LP workstation. The configuration file includes processor name, version, logging level, and the name of a defining Task Table file for each processor. So far only one L2B-LP is defined in this file. The related Task Table is described in 4.1.2.

Processor Name	Description
AE_L1B_L2B	Processor takes a Level 1B product file and produces an Aeolus Level 2B product

Table 4-1 Aeolus L2B Late-Processor Defined in Workstation Configuration File

The structure of the Workstation Configuration File is defined in section 4.3 of [AD 1].

4.1.2 Processor Task Table

The Task Table interface is an XML file used by the Thin Layer that defines the L2B-LP configuration required to accomplish a specific task. The Task Table file contains the list of tasks (each task consisting of one or more executables) that comprise the L2B-LP, and the input and output files required for each task. Currently the TL supports 6 algorithms to select input files: ValCover, LatestValCover, ValIntersect, LatestValIntersect, LatestValidityClosest, and BestCentredCover. It remains to be seen whether these are sufficient to cover the situation where a Level-1B input file requires two AUX_MET_12 files.

The L2B-LP Task Table is used by the TL to define the exact sequence of L2B-LP tasks to run, their location and the location and version of the processor specific configuration files. For the Aeolus L2B-LP there is only one data processing task, the L2B Processor Task, and a Report Generator Task. The L2B Processor Task processes L1B data to the L2B level and generates an intermediate product list. The Report Generator Task creates the Product Report and updates the Product List described in

4.2.5 and 4.2.6 respectively. A detailed description of the L2B Processor task and the Report Generator Task may be found in [RD 1].

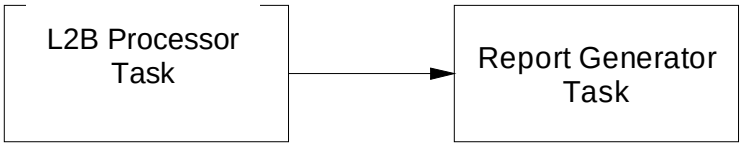

Figure 4-1 Aeolus L2B Processor Tasks

The structure of the Task Table is defined in section 4.1 of [AD 1].

4.1.2.1 Processor Task Table

- <Min_Disk_Space> An update of the value in the example Task Table of A.2 is TBD.
- <List_of_Config_Spaces> Currently no configuration spaces are defined or used by the L2B-LP. Nonetheless a placeholder is reserved for future use.
- <File_Type> The file types known to the L2B-LP are listed in section 4.3
- Allowed combinations of <Origin> and <File_Name_Type> for input files to the Version 1.3 of the L2B-LP are:
    - DB, Physical
    - LOG, Physical

4.1.3 Processor Configuration File

The task table configuration file requires as described in the latest version of the PDS-IPF ICD a non-empty list of processor configuration files, see section 4.1 of [AD 1].

The need for such a file for the L2B late-processor was not yet identified.

As a consequence a Processor_Configuration_AE_L1B_L2B.xml stub file was generated, see A.3.

4.2 Control and Status Interfaces

The interfaces described in this section are those that define the control and status interfaces between the Aeolus L2B Late-Processor and the PDS TL.

4.2.1 Job Order

The Job Order interface is an XML file provided to the L2B-LP by the TL. This file contains all the fields required to define a single Aeolus data processing job. The name of the Job Order file will be provided on the command line of every processor task invoked by the Thin Layer. Job Order files are named JobOrder.<order_id>.xml, where order_id is a unique identifier provided for each Job Order.

Aeolus L2B Late-Processor Job Orders include the following information:

Processor name: This is the name of the Processor (as defined in the Workstation Configuration File) processing the current Job Order.

Processor version: This is the version of the Processor (as defined in the Workstation Configuration File) processing the current Job Order.

Order type: This is the order type of the Job Order, and can be of any type valid for this Processor, as specified in the Workstation Configuration File, described in Section 4.1.1. Note that the choice of Order Type does not change the behaviour of the L2B-LP tasks, but will be annotated in any products created. In particular, the order-type is used to determine the File_Class of the Level-2B output product and its filename, so the Order type must be precisely 4 characters in length.

Logging level: One of the valid log levels, defined for the Logging interface described in Section 4.2.4.

Acquisition station: Name of the ground station where the satellite downlink was acquired. The L2B-LP will use the acquisition station defined in the Job Order to annotate the output products.

Processing station: Name of the location where the Job Order is processed. This character string must not exeed 6 characters in length, for compatibility with fixed-length KVT fields in the DBL part of the output L2B product (specifically, MPH.Proc_Center).

Sensing start and stop time: The start and stop time of the data to be processed. If these times are outside the extents of the input file provided to a processor task, then the entire input file will be processed. If the times are within the extents of an input file, only the data within the sensing start and stop times will be processed.

Configuration files: Configuration files required by the current instance of the processor, as defined in the processor's Task Table. These are static configuration files used by any of the tasks in a processor.

Input file names: List of input files required by each task defined in the Task Table for the current processor instance. If the origin specified for an input file is type "DB", then the Thin Layer provides an input file of the desired type and validity time range in the processing directory of the L2B-LP local disk, and includes the full file and path name in the Job Order. Note: A "file type" in the IPF-Thin Layer context refers to a string which uniquely identifies a particular type of product file. All files of a particular type contain that string in their name. See section 4.3 for known file types.

Output file names: List of output files created by each task defined in the Task Table for the current processor instance. See section 4.3 for known file types.

The structure of the Task Table is defined in section 4.2 of [AD 1].

4.2.2 Start Stop Process

The Thin Layer launches each L2B-LP task defined for a processor as a simple command line executable that takes a Job Order file name as a parameter. The Thin Layer can stop an L2B-LP task prior to completion using a Unix signal. The signal to be used to stop a task is specified in the Task Table.

4.2.3 Exit Code

Each processing task in the L2B-LP returns an exit code upon process completion. This code is Operating System defined and indicates the conditions under which the process exited, such as process success or failure. The codes used by the L2B-LP will follow the valid ranges specified in [AD 1]. for OK, INCOMPLETE and FAILURE return codes. Note that, upon exit, the L2B-LP will not remove any files from the working directory being used to process the current Job Order.

4.2.4 Logging

The Logging interface consists of a series of formatted messages generated by the L2B-LP on stdout/stderr and trapped by the TL. [AD 1] section 4.5 describes the specific format of the log messages required in the Aeolus PDS, as well as a list of the types of messages to be logged. The log file name is dynamic, based on the Job Order Id: <joborderid>.LOG. The log messages provided by the L2B-LP belong to one of the following categories, ordered from lowest to highest priority:

• Debug messages (provided on stdout or stderr)

• Informational messages (provided on stdout or stderr)

• Progress messages (provided on stdout or stderr)

• Warning messages (provided on stdout or stderr)

• Error messages (provided on stdout or stderr)

Error messages, the highest priority messages, are always logged. The logging of other messages is controlled by the logging level field in the Job Order. Aeolus L2B Processor task will only log messages at the specified logging level priority or higher (e.g., if the logging level is Progress, only Progress, Warning and Error messages will be logged). The Aeolus L2B Processor task also writes these messages to a Log File. This file is then read by the Report Generator task, which parses the log messages and extracts information required to produce the Product Report and Product list at the conclusion of a Job Order. For a list of error messages see Annex B.

4.2.5 Product Report

The Product Report interface is an XML file provided by the L2B-LP to the TL at the conclusion of a Job Order. The report contains XML-formatted messages that have been parsed from the Log File, which uses the message formatting required for the Logging interface. Every message in the Product Report includes the following:

• Processor name

• Processor version

• Time message was logged

Messages included in the Product Report describe the following:

• Processing task names

• Processing task versions

• Start and stop time of each operation

• Names of input files used during processing

• Names of output files produced during processing

• Size of each output file created

• Synthetic exit code (SUCCESS/FAILURE) for the generation result

• List of errors and warnings

The Product Report is created by the Report Generator Task. Its format is defined in section 4.4 of [AD 1].

4.2.6 Product List

The Product List interface is an ASCII file provided by the L2B-LP to the TL at the conclusion of a Job Order. This file lists all the product files created by the L2B-LP as a list of filenames, one filename per line in the file and is provided in the processing directory where the Job Order was processed. The name of this file is <order_id>.LIST, where order_id is extracted from the Job Order filename.

The Product List is created by the Report Generator Task, which is the last task defined in the Task Table for all processors. The Product List is only created if products were successfully created during Job Order processing. The Thin Layer retrieves and archives all product files named in the Product List file.

The Product List is created by the Report Generator Task. Its format is defined in section 4.8 of [AD 1].

4.3 Data Flow Interfaces

This section describes the interfaces between the Aeolus L2B Late-Processor and the Thin Layer that are defined by data products. The data described by these interfaces are not created or stored by the Thin Layer. However the Thin Layer is responsible for transferring these files between the L2B-LP and other components of the Aeolus PDS. The L2B-LP does not interface with other components of PDS directly.

4.3.1 Level 1b Input Product

The ADM-Aeolus L2B Processor takes as input an ADM-L1b product that was previously generated within the PDS by the ADM Aeolus Level 1b Processor. For detailed definition see [RD 5].

4.3.2 Auxiliary Data Input Products

The ADM-Aeolus L2B Processor takes five auxiliary data files as input. Two of these files, the Rayleigh-Brillouin Correction data file and the Climatological Data file are generated by external tools. A third file containing calibration coefficients may be used in future versions of the L2B processor for some processing options, currently under development. The Auxiliary Meteorological Data file is available from the LTA (but such files are generated at ECMWF) and finally a processing parameters file is needed.

Entries in the Product Prefix column are used as File_Types in the Task Table and the Job Order.

Product Prefix	Input Product Description	Formal Description
AUX_RBC_L2	Rayleigh-Brillouin correction data auxiliary file	[RD 6] (supersedes description in [RD 3])
AUX_CLM_L2	Climatological data auxiliary file (Extinction-to-Backscatter ratio)	[RD 3]
AUX_CAL_L2	Calibration coefficient data auxiliary file	[RD 8]
AUX_MET_12	Meteorological data auxiliary file	[RD 3]
AUX_PAR_2B	Aeolus L2B processing parameters auxiliary file	[RD 3]

4.3.3 Additional Input Products - Report Generator

The Product List is generated by the L2B-LP as an intermediate file and is used as an input (and updated output) by the Report Generator. So the File_type LIST is known to the Report Generator.

Also, the Report Generator expects a log file generated by the TL, which is known to the L2B-LP with File_Type LOG.

4.3.4 Level 2B Output Product

The ADM-Aeolus L2B Processor generates a single output product file.

Product Prefix	Input Product Description	Formal Description
ALD_U_x_2B	Level 2B meteorologically representative wind product file. Here x is "N" by default for all L2B products, including late and re-processed products (which should instead be identified by File_Class='RPRO').	[RD 3]

4.3.5 Additional Output Products - Report Generator

The Report Generator generates the Product Report is which is known to the Report Generator with File_Type ALD_REP_2B.

5 Interface File Flow

This section describes the only(?) scenario for which the Aeolus L2B Late-Processor is configured, and provides an event trace diagram to show how PDS TL and L2B-LP interact.

5.1 Nominal L2B Late-Processing Scenario

In the nominal L2B late-processing scenario, the L2B-LP processes previously generated L1B data products to L2B meteorologically representative wind data products.

The TL executes the following tasks shown in Figure 5-1 to accomplish this task.

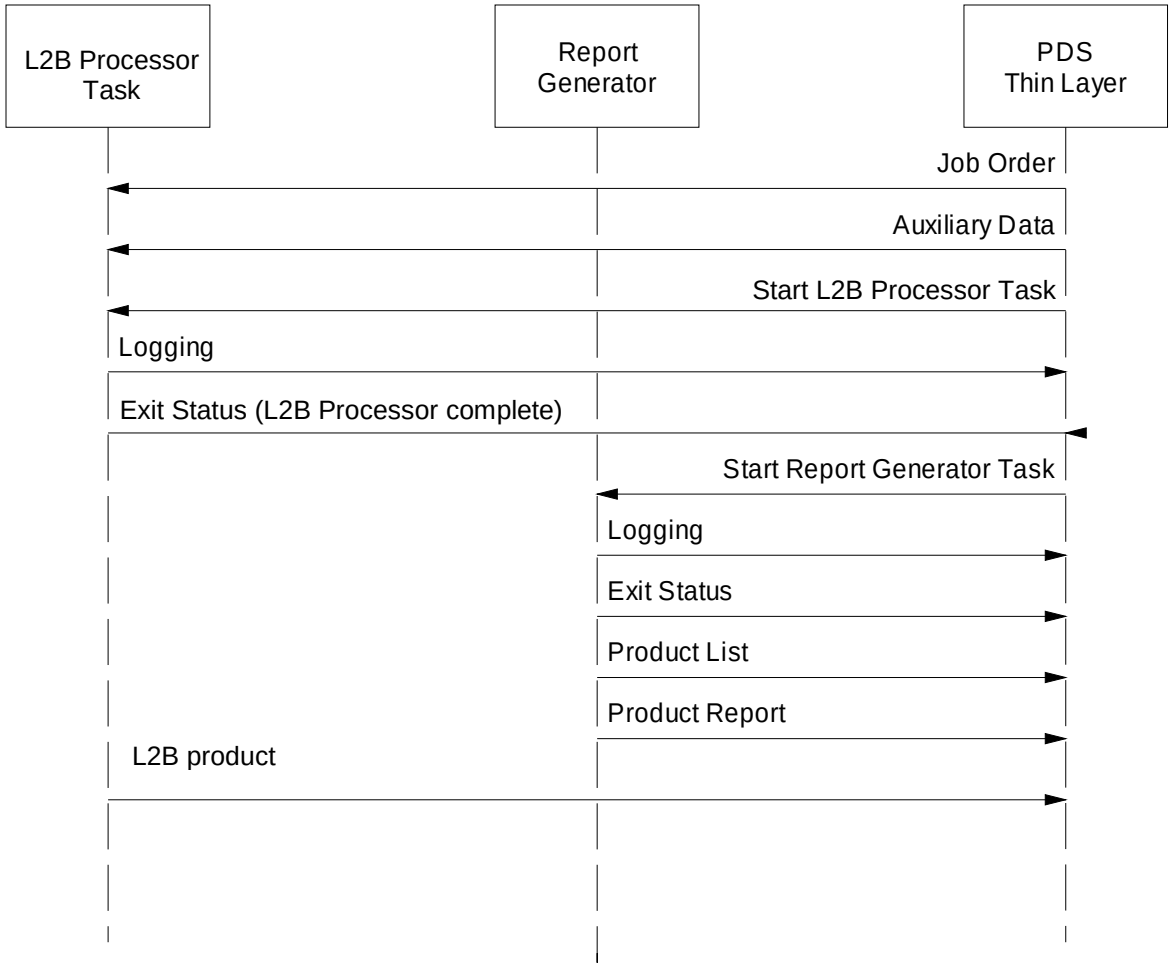

Figure 5-1 Nominal L2B-LP product generation event trace diagram

A XML File Examples

The following are sample XML files which demonstrate the interfaces between the Aeolus L2B Late-Processor and the PDS Thin Layer. For each XML interface defined, XML Schemas are also available to describe the expected structure and valid values for the given interface.

The examples given here are superseded by the files supplied with processor releases (directory name ThinLayer).

A.1 Workstation Configuration

```
<?xml version="1.0" encoding="UTF-8" ?>
- <!--
  ================================================================================
  Filename      : WorkstationConfigurationFile.xml
  Project       : ADM-Aeolus
  Document Type : XML
  Purpose       : ADM-Aeolus L2BP-ThinLayer Workstation Configuration File

  (c) COPYRIGHT DLR, 2006

  Author              Date          Changes
  ****************  ************
  ***************************************
  D. Huber            09-Aug-2006   Initial Release.
  ================================================================================
  =

 -->
- <Proc_Table>
- <List_of_Processors count="1">
- <Processor>
  <Processor_Name>AE_L1B_L2B</Processor_Name>
  <Version>0.1</Version>
  <Log_Level>INFO</Log_Level>
  <Stdout_Log_Level>DEFAULT</Stdout_Log_Level>
  <Stderr_Log_Level>WARNING</Stderr_Log_Level>
  <Task_Table>/runtime/aeolus/etc/TaskTable.AE_RAW_L0.xml</Task_Table>
- <List_of_Orders Count="3">
- <Order>
  <Order_Type>?????????</Order_Type>
  <Status>enabled</Status>
  </Order>
  </List_of_Orders>
  </Processor>
```

```
</List_of_Processors>
</Proc_Table>
```

A.2 Task Table

```
<?xml version="1.0" encoding="UTF-8" ?>
- <!--
================================================================================
Filename      : TaskTable.xml
Project       : ADM-Aeolus
Document Type : XML
Purpose       : ADM-Aeolus L2BP-ThinLayer Task Table File

(c) COPYRIGHT DLR, 2006

Author          Date          Changes
***********     ************
************************************************
D.Huber         09-Aug-2006   Initial Release.

================================================================================
=
-->
- <Task_Table>
  <Processor_Name>AE_L1B_L2B</Processor_Name>
  <Version>0.1</Version>
  <Test>No</Test>
  <Min_Disk_Space units="MB">1024</Min_Disk_Space>
  <Max_Time units="sec">0</Max_Time>
- <!-- No time limit for execution -->
  - <Private_Config>
  - <List_of_Cfg_Files count="1">
  - <Cfg_File>
- <!-- Processor Configuration Parameters -->
  <Version>01.00</Version>
  <File_Name>~/etc/Processor_Configuration_AE_L1B_L2B.xml</File_Name>
</Cfg_File>
</List_of_Cfg_Files>
  <Default>0</Default>
</Private_Config>
  <List_of_Config_Spaces count="0" />
  - <List_of_Pools count="2">
```

- <Pool>
- <!-- Level 2A Processor Task -->
<Detached>**false**</Detached>
<Killing_Signal>**9**</Killing_Signal>
- <!-- SIGTERM -->
- <List_of_Tasks count="**1**">
- <Task>
<Name>**IPF1_L1B_L2B**</Name>
<Version>**0.1**</Version>
<Critical>**true**</Critical>
<Criticality_Level>**2**</Criticality_Level>
<File_Name>**~/bin/L2B_ProcMain**</File_Name>
- <List_of_Inputs count="**5**">
- <Input id="**level 1B product**">
- <!-- Level 1B Product -->
<Mode>**ALWAYS**</Mode>
<Mandatory>**Yes**</Mandatory>
- <List_of_Alternatives count="**1**">
- <Alternative>
<Order>**0**</Order>
<Origin>**DB**</Origin>
<Retrieval_Mode>**LatestValidityClosest**</Retrieval_Mode>
<T0 units="**sec**">**0**</T0>
<T1 units="**sec**">**0**</T1>
<File_Type>**ALD_U_N_1B_**</File_Type>
<File_Name_Type>**Stem**</File_Name_Type>
</Alternative>
</List_of_Alternatives>
</Input>
- <Input id="**level_2b_config_aux**">
- <!-- Level 2B Processor Config Aux Product -->
<Mode>**ALWAYS**</Mode>
<Mandatory>**Yes**</Mandatory>
- <List_of_Alternatives count="**1**">
- <Alternative>

<Order>**0**</Order>
<Origin>**DB**</Origin>
<Retrieval_Mode>**LatestValidityClosest**</Retrieval_Mode>
<T0 units="**sec**">**0**</T0>
<T1 units="**sec**">**0**</T1>
<File_Type>**AUX_PAR_2B**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
</Alternative>
</List_of_Alternatives>
</Input>
- <Input id="**RBC_aux**">
- <!-- Rayleigh Brillouin Aux File -->
<Mode>**ALWAYS**</Mode>
<Mandatory>**Yes**</Mandatory>
- <List_of_Alternatives count="**1**">
- <Alternative>
<Order>**0**</Order>
<Origin>**DB**</Origin>
<Retrieval_Mode>**LatestValidityClosest**</Retrieval_Mode>
<T0 units="**sec**">**0**</T0>
<T1 units="**sec**">**0**</T1>
<File_Type>**AUX_RBC_AX**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
</Alternative>
</List_of_Alternatives>
</Input>
- <Input id="**meteorological_aux**">
- <!-- Meteorological Aux Product -->
<Mode>**ALWAYS**</Mode>
<Mandatory>**Yes**</Mandatory>
- <List_of_Alternatives count="**1**">
- <Alternative>
<Order>**0**</Order>
<Origin>**DB**</Origin>
<Retrieval_Mode>**LatestValidityClosest**</Retrieval_Mode>

```
<T0 units="sec">0</T0>
<T1 units="sec">0</T1>
<File_Type>AUX_MET_12</File_Type>
<File_Name_Type>Physical</File_Name_Type>
</Alternative>
</List_of_Alternatives>
</Input>
- <Input id="ext_back__aux">
- <!-- Extinction-to-Backscatter Ratio Aux File -->
<Mode>ALWAYS</Mode>
<Mandatory>Yes</Mandatory>
- <List_of_Alternatives count="1">
- <Alternative>
<Order>0</Order>
<Origin>DB</Origin>
<Retrieval_Mode>LatestValidityClosest</Retrieval_Mode>
<T0 units="sec">0</T0>
<T1 units="sec">0</T1>
<File_Type>AUX_CLM_AX</File_Type>
<File_Name_Type>Physical</File_Name_Type>
</Alternative>
</List_of_Alternatives>
</Input>
</List_of_Inputs>
- <List_of_Outputs count="1">
- <Output>
- <!-- Level 2B Product -->
<Destination>DB</Destination>
<Mandatory>Yes</Mandatory>
<File_Type>ALD_U_R_2B</File_Type>
<File_Name_Type>Stem</File_Name_Type>
</Output>
</List_of_Outputs>
<List_of_Breakpoints count="0" />
</Task>
```

```
</List_of_Tasks>
</Pool>
 - <Pool>
- <!-- Report Generation Task -->
    <Detached>false</Detached>
    <Killing_Signal>9</Killing_Signal>
- <!-- SIGTERM -->
  - <List_of_Tasks count="1">
  - <Task>
    <Name>IPF1_REP_GEN</Name>
    <Version>01.00</Version>
    <Critical>true</Critical>
    <Criticality_Level>2</Criticality_Level>
    <File_Name>~/bin/RGProcMain</File_Name>
  - <List_of_Inputs count="1">
  - <Input>
    <Mode>ALWAYS</Mode>
    <Mandatory>Yes</Mandatory>
  - <List_of_Alternatives count="1">
  - <Alternative>
    <Order>0</Order>
    <Origin>LOG</Origin>
    <Retrieval_Mode>ValCover</Retrieval_Mode>
    <T0 units="sec">0</T0>
    <T1 units="sec">0</T1>
    <File_Type>LOG</File_Type>
    <File_Name_Type>Physical</File_Name_Type>
  </Alternative>
  </List_of_Alternatives>
  </Input>
  </List_of_Inputs>
  - <List_of_Outputs count="2">
  - <Output>
    <Destination>DB</Destination>
    <Mandatory>Yes</Mandatory>
```

```
    <File_Type>ProductReport</File_Type>
    <File_Name_Type>Physical</File_Name_Type>
  </Output>
  - <Output>
    <Destination>DB</Destination>
    <Mandatory>Yes</Mandatory>
    <File_Type>ProductList</File_Type>
    <File_Name_Type>Physical</File_Name_Type>
  </Output>
  </List_of_Outputs>
    <List_of_Breakpoints count="0" />
  </Task>
  </List_of_Tasks>
  </Pool>
  </List_of_Pools>
  </Task_Table>
```

A.3 Processor Configuration

```
<?xml version="1.0" encoding="UTF-8" ?>
    - <!--
    ============================================================================
    Filename      : Processor_Configuration_AE_L1B_L2B_WIND_ONLY.xml
    Project       : ADM-Aeolus
    Document Type : XML
    Purpose       : ADM-Aeolus L2B Processor Configuration File

    (c) COPYRIGHT DLR, 2006

    Author              Date          Changes
    *****************   ************
    ****************************************
    D. Huber            09-Aug-2006   Initial Release.

    ============================================================================
    =

  -->
  - <Processor_Configuration>
    <Software_Version>ADM_L2BP/0.1</Software_Version>
  </Processor_Configuration>
```

Note that this is simply a placeholder configuration file. The parameter Software_Version is not to be confused with the one from JobOrder files, and may eventually be deleted.

A.4 Job Order

```
<?xml version="1.0" encoding="UTF-8" ?>
- <!--
   ============================================================================
   Filename      : JobOrder.xml
   Project       : ADM-Aeolus
   Document Type : XML
   Purpose       : ADM-Aeolus L2BP-ThinLayer Job Order File

   (c) COPY

   Author              Date          Changes
   ****************  ************
   ****************************************
   D. Huber            09-Aug-2000   Initial Release.

   ============================================================================
   =
 -->
 - <Ipf_Job_Order>
 - <Ipf_Conf>
   <Processor_Name>AE_L1B_L2B</Processor_Name>
   <Version>00.01</Version>
   <Order_Type>SYSTEMATIC</Order_Type>
   <Stdout_Log_Level>INFO</Stdout_Log_Level>
   <Stderr_Log_Level>NOOP</Stderr_Log_Level>
- <!-- Warning: non-standard level to prevent duplicate log messages on the console while testing -->
   <Test>false</Test>
   <Breakpoint_Enable>false</Breakpoint_Enable>
   <Acquisition_Station>Kiruna</Acquisition_Station>
   <Processing_Station>Esrin</Processing_Station>
   <Config_Files />
 - <Sensing_Time>
   <Start>20071002_000000</Start>
   <Stop>20071002_000441</Stop>
 </Sensing_Time>
 </Ipf_Conf>
 - <List_of_Ipf_Procs count="2">
 - <Ipf_Proc>
```

- <!-- Level 2B Processor Task -->
<Task_Name>**IPF1_L1B_L2B**</Task_Name>
<Task_Version>**00.01**</Task_Version>
- <Breakpoint>
<Enable>**OFF**</Enable>
<List_of_Brk_Files count="**0**" />
</Breakpoint>
- <List_of_Inputs count="**5**">
- <Input>
- <!-- L1B File -->
<File_Type>**ALD_U_N_1B**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
- <List_of_File_Names count="**1**">
<File_Name>**./data/L2BP_TDS_01/AE_TEST_ALD_U_N_1B_20071002T000001986_006048000_000004_0002.DBL**</File_Name>
</List_of_File_Names>
- <List_of_Time_Intervals count="**1**">
- <Time_Interval>
<Start>**20040704_154927**</Start>
<Stop>**20040704_155100**</Stop>
<File_Name>**./data/L2BP_TDS_01/AE_TEST_ALD_U_N_1B_20071002T000001986_006048000_000004_0002.DBL**</File_Name>
</Time_Interval>
</List_of_Time_Intervals>
</Input>
- <Input>
- <!-- Level 2B Processor Config Aux Product -->
<File_Type>**AUX_PAR_2B**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
- <List_of_File_Names count="**1**">
<File_Name>**./aux/AE_TEST_AUX_PAR_2B_20050331T000000_20111231T000000_0000.EEF**</File_Name>
</List_of_File_Names>
- <List_of_Time_Intervals count="**1**">

- <Time_Interval>
<Start>**20040704_154927**</Start>
<Stop>**20040704_155100**</Stop>
<File_Name>**./aux/AE_TEST_AUX_PAR_2B_20050331T000000_20111231T000000_0000.EEF**</File_Name>
</Time_Interval>
</List_of_Time_Intervals>
</Input>
- <Input>
- <!-- Rayleigh Brillouin Aux File -->
<File_Type>**AUX_RBC_AX**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
- <List_of_File_Names count="**1**">
<File_Name>**./aux/AE_TEST_AUX_RBC_AX_20050101T000000_20111231T000000_0000.EEF**</File_Name>
</List_of_File_Names>
- <List_of_Time_Intervals count="**1**">
- <Time_Interval>
<Start>**20040704_154927**</Start>
<Stop>**20040704_155100**</Stop>
<File_Name>**./aux/AE_TEST_AUX_RBC_AX_20050101T000000_20111231T000000_0000.EEF**</File_Name>
</Time_Interval>
</List_of_Time_Intervals>
</Input>
- <Input>
- <!-- Meteorological Aux Product -->
<File_Type>**AUX_MET_12**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
- <List_of_File_Names count="**1**">
<File_Name>**./aux/AE_TEST_AUX_MET_12_20071001T180002_20071001T180102_0000.EEF**</File_Name>
</List_of_File_Names>
- <List_of_Time_Intervals count="**1**">

- <Time_Interval>
<Start>**20040704_154927**</Start>
<Stop>**20040704_155100**</Stop>
<File_Name>**./aux/AE_TEST_AUX_MET_12_20071001T180002_20071001T180102_0000.EEF**</File_Name>
</Time_Interval>
</List_of_Time_Intervals>
</Input>
- <Input>
- <!-- Extinction-to-Backscatter Ratio Aux File -->
<File_Type>**AUX_CLM_AX**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
- <List_of_File_Names count="**1**">
<File_Name>**./aux/AE_TEST_AUX_CLM_AX_20071001T180002_20071001T180102_0000.EEF**</File_Name>
</List_of_File_Names>
- <List_of_Time_Intervals count="**1**">
- <Time_Interval>
<Start>**20040704_154927**</Start>
<Stop>**20040704_155100**</Stop>
<File_Name>**./aux/AE_TEST_AUX_CLM_AX_20071001T180002_20071001T180102_0000.EEF**</File_Name>
</Time_Interval>
</List_of_Time_Intervals>
</Input>
</List_of_Inputs>
- <List_of_Outputs count="**1**">
- <Output>
- <!-- Level 2B Product -->
<File_Type>**ALD_U_N_2B_**</File_Type>
<File_Name_Type>**Directory**</File_Name_Type>
<File_Name>**working/07011**</File_Name>
</Output>
</List_of_Outputs>

```
</Ipf_Proc>
 - <Ipf_Proc>
- <!-- Report Generation Task -->
   <Task_Name>IPF1_REP_GEN</Task_Name>
   <Task_Version>01.00</Task_Version>
  - <Breakpoint>
   <Enable>OFF</Enable>
   <List_of_Brk_Files count="0" />
  </Breakpoint>
  - <List_of_Inputs count="1">
  - <Input>
- <!-- Log File -->
   <File_Type>LOG</File_Type>
   <File_Name_Type>Physical</File_Name_Type>
  - <List_of_File_Names count="1">
   <File_Name>working/07011/07011.LOG</File_Name>
  </List_of_File_Names>
  - <List_of_Time_Intervals count="1">
  - <Time_Interval>
   <Start>20040704_154927</Start>
   <Stop>20040704_155100</Stop>
   <File_Name>working/07011/07011.LOG</File_Name>
  </Time_Interval>
  </List_of_Time_Intervals>
  </Input>
  </List_of_Inputs>
  - <List_of_Outputs count="2">
  - <Output>
- <!-- Product Report -->
   <File_Type>ProductReport</File_Type>
   <File_Name_Type>Physical</File_Name_Type>
   <File_Name>working/07011/REPORT.07011</File_Name>
  </Output>
  - <Output>
- <!-- Product List -->
```

<File_Type>**ProductList**</File_Type>
<File_Name_Type>**Physical**</File_Name_Type>
<File_Name>**working/07011/LIST.07011**</File_Name>
</Output>
</List_of_Outputs>
</Ipf_Proc>
</List_of_Ipf_Procs>
- <Processor_Conf>
- <!-- Processor Config File -->
<File_Name>**./etc/Processor_Configuration_AE_L1B_L2B_.xml**</File_Name>
</Processor_Conf>
</Ipf_Job_Order>

A.5 Product Report

See [RD 7], Annex A.5.

A.6 Product List

working/07011/AE_TEST_ALD_U_N_2B_20071002T000001986_006048000_000004_0001.DBL
working/07011/AE_TEST_ALD_U_N_2B_20071002T000001986_006048000_000004_0001.HDR

working/07011/AE_TEST_ALD_REP_2B_20071002T000001986_006048000_000004_0001.EEF

working/07011/LIST.07001

B Error Messages

According to section 4.5.5 of [AD 1], this document shall list the error messages of the L2B-LP. This list is still TBD.

C Exit Codes

The list of exit codes for the L2B-LP is still TBD.