

Coordination unit CU6: spectroscopic processing

2nd workshop

12-13 October 2006

Royal Observatory of Belgium - Brussels

- ❖ **Status of the RVS design**
- ❖ **Status of the consortium**
- ❖ **Status of CU6**

- ❖ **Objectives of the workshop**

- ❖ **Phases/deliverables for a generic development cycle**
- ❖ **Master schedule for 2006-2008**
- ❖ **Objectives and agenda for cycle 2**

D . Katz

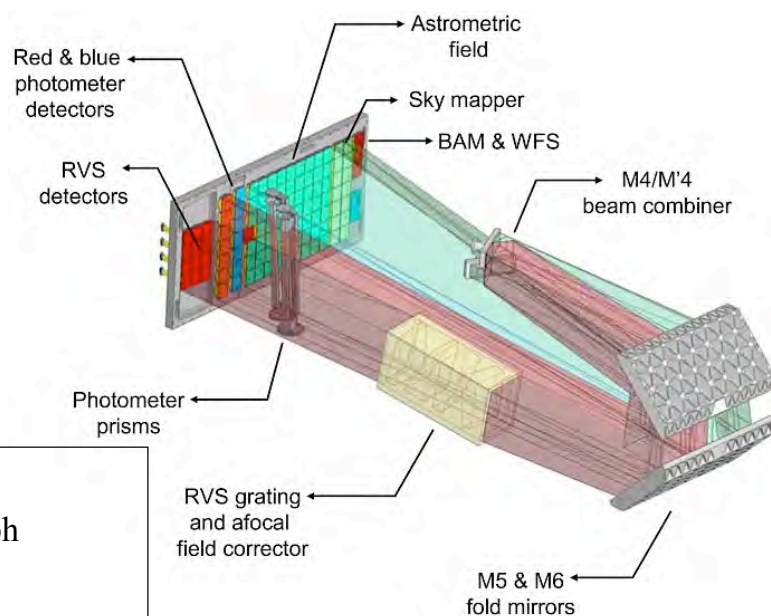
Status of the RVS design

RVS design (1)

❖ Agenda

- **Oct. 05:** Industrial consortia answers (Alcatel/Alenia and Astrium)
- **Dec. 05:** Recommendation by the evaluation board to select Astrium
- **Feb. 06:** Astrium selected as prime contractor.
- **March 06:** Start of phase B2 (~1 year)
→ optimisation of the RVS design
- **July 06:** RVS design optimisation 90% completed

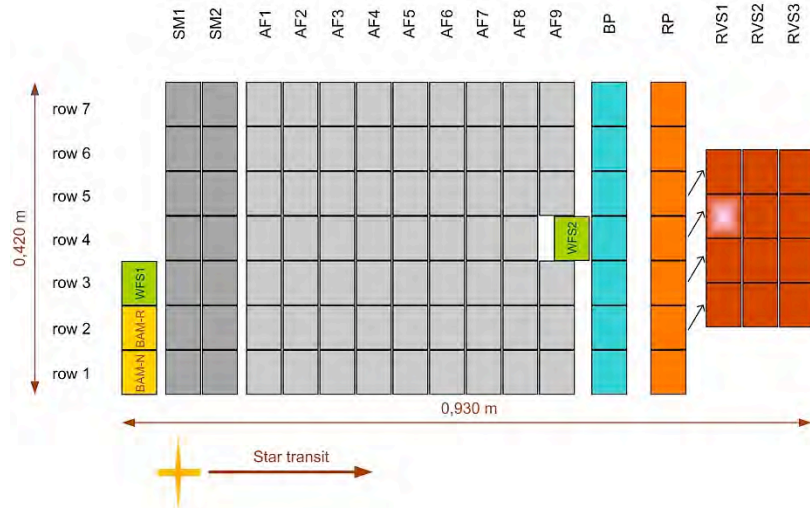
RVS design (2)



❖ **RVS instrument**

- Dioptric spectrograph
- N FoVs = 2
- R = 11 500
- λ in [847, 874] nm
- FoV = 0.22×0.39 deg²
- Exposure = 4.42 s
- N transits = 40

RVS design (3)

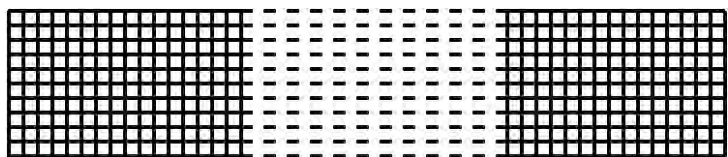


- N CCD = 3 (AL) × 4 (AC)
- CCD type = classical
- CCD = 4500 (AL) × 1966 (AC) pixels
- CCD read in windowed mode – no on-board co-addition

RVS design (4)

❖ 3 Sampling schemes

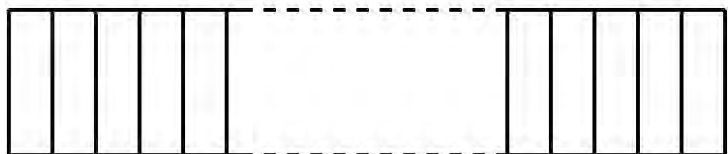
- $5 \leq G_RVS \leq 7$
- Calibration faint stars
- 1104×10 samples (1×1)
- 0.26 A/sample



- $7 \leq G_RVS \leq 10$
- 1104×1 samples (1×10)
- 0.26 A/sample



- $10 \leq G_RVS \leq 17$
- 368×1 samples (3×10)
- 0.78 A/sample



Status of the Consortium

Gaia Data Processing & Analysis Consortium status

❖ Agenda

- **Q1 05:** Community express interests in Gaia processing via Letters of Intent (LoI)
- **April 05:** Start of the definition of a Gaia data processing consortium
- **mid-June 06:** Creation of the DPAC
 - ✓ Start drafting the answer to the AO
- **mid-Nov 06:** AO released by ESA
- **mid-Dec 06:** DPAC answers the AO
- **early-Jan 07:** “Negotiation” with ESA

❖ DPAC-CU6 activity kick-off at workshop 2.

Status of CU6

Status of CU6

❖ Structure

- 47 members

❖ Work Breakdown Structure (WBS)

- 61 out of 63 WPs taken care of

❖ Actions

- List of TWP and WP frozen → **Completed**
- 49 out of 54 description pages received → In progress
- revision of the description pages → In progress
- Write first version of SDP → **Completed**

❖ Agenda, deliverables, etc...

- Software Development Plan – GAIA-C6-SP-OPM-DK-003-1
- CU6 workshop 2

Objectives of the workshop

Objectives of the 2nd CU6 workshop

- ❖ **Present in details the “structure” of a development cycles**
 - Phases and deliverables: e.g. specification, design, ...
 - Recommended tools: e.g. subversion, netbeans, mantis, ...
 - Protocol: e.g. code delivery, code modification, ...
 - Detailed presentations on first day (GAIA-C1-SP-CNES-TL-001)

- ❖ **Review, discuss and agree plans for Cycle 2 (WP per WP)**
 - Deliverables
 - Agenda

Phases & deliverables for a generic development cycle

Development cycle

❖ 6 months development cycle (in phase for all CUs):

- **Review previous cycle & agree plans for next cycle:** Software Development Plan & workshop – 1 for CU6
- **Define requirements:** Software Requirement Document – 1 per DU
- **Define design:** Software Design Document – 1 per DU
- **Define test campaign:** Software Test Plan Document – 1 per DU
- **Implement software products**
- **Description of the software:** Software User Manual – 1 per DU
- **Delivery of the software**
- **Integration, validation, test at CNES centre**

- **Summary of requests for test data (to CU2) and for auxiliary data (to CU8):** Test & auxiliary data requirements document – 1 for CU6

Master schedule: 2006-2008

Master schedule 2006 - 2008

❖ Cycle 2 [mid-Oct 06 – mid-May 07]

- Validate QA procedures
- Specify requirements & design for all WPs (except multiple-transits)
- Implement & deliver 7 firsts software products

❖ Cycle 3 [mid-May 07 – end-Nov 07]

- Implement & deliver all WPs (except multiple-transits)
- First end to end tests at CNES

❖ Cycle 4 [Dec-07 – end-May 08]

- Optimise all WPs (except multiple-transits)
- Specify requirements & design multiple-transits

❖ Cycle 5 [June 08 – end-Nov 08]

- Implement & deliver all WPs
- Second end-to-end tests at CNES

Objectives & agenda:

Cycle 2

Cycle 2

❖ 2 different series of WPs

- Specification, design, implementation, delivery, integration, tests
- Specification, design

❖ First Series

- ✓ Host framework infrastructure
- ✓ Normalisation to the continuum
- ✓ Wavelength scale & distortion
- ✓ V_r & $v_{\text{ sini}}$ by CC in direct space
- ✓ V_r in Fourier space
- ✓ V_r & $v_{\text{ sini}}$ by MdM
- ✓ V_r & $v_{\text{ sini}}$ by TODCOR-like meth.

❖ Second series

- ✓ Spectra extraction
- ✓ Calibration
- ✓ Astrophysical zero point
- ✓ Coarse characterisation of sources
- ✓ Detailed first look and validation: single transit
- ✓ Science alerts
- ✓ Assess source spectroscopic stability/variability

Cycle2: agenda

❖ First series

- ✓ **10 Nov 06:** Delivery of Software Requirement Document
- ✓ **8 Dec 06:** Delivery of Software Design Document
- ✓ **30 March 07:** Delivery of:
 - Software Product
 - Performance Report Document
 - Software User Manual
- ✓ **11 May 07:** Completion of the integration, validation and tests

❖ Second series

- ✓ **15 Dec 06:** Delivery of draft Software Requirement Document
- ✓ **15 Jan 07:** Validation of draft Software Requirement Document
- ✓ **15 Jan 07:** Delivery of draft Software Design Document
- ✓ **15 Feb 07:** Validation of draft Software Design Document
- ✓ **16 March 07:** Delivery of revised Software Requirement Document
- ✓ **13 Apr 07:** Validation of revised Software Requirement Document
- ✓ **13 Apr 07:** Delivery of revised Software Design Document
- ✓ **11 May 07:** Validation of revised Software Design Document