



**Enabling
Virtual
Access to
Latin-American
Southern
Observatories**

<http://www.evalso.eu>

Work Package: **SA1 – Link Upgrade**

Deliverable No: **SA1-1.4**

Deliverable Name: **Statement of Work for the PAO-
Ruta5 fibre (Item 1a)**

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Dissemination Level²: **CO**

Abstract

This document defines activities, processes, and deliveries for the optical infrastructure identified as Item 1a in the SA1.1 Technical Specification, namely a new fibre between ESO/Paranal Observatory and the “La Varilla” crossroad (Ruta5/B710 crossroad).

This version replaces the previous one, dated 2009/09/21.

¹ nature of the deliverable: **R** = Report, **P** = Prototype, **D** = Demonstrator, **O** = Other

² Dissemination level **PU** = Public
PP = Restricted to other programme participants (including the Commission Services).
RE = Restricted to a group specified by the consortium (including the Commission Services).
CO = Confidential, only for members of the consortium (including the Commission Services).

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LIST OF ABBREVIATIONS

ADSS	All Dielectric Self Supported (fibre cable)
FDR	Final Design Review
CfT	Call for Tender
KoM	Kick-off Meeting
MoM	Minutes of Meeting
MOP	(Republica de Chile) Ministerio de Obras Publicas (Chilean Ministry for Public Work)
N/A	Not Applicable
OCA	Observatorio Cerro Armazones
PDR	Preliminary Design Review
SLA	Service Level Agreement
SoW	Statement of Work
T ₀	Contract Start

1 RELATED DOCUMENTS

1.1 Applicable documents

The following Applicable Documents (AD) form part of the present document to the extent specified herein. In the event of conflict between Applicable Documents and the content of the present document, the content of the present document shall be taken as superseding.

- AD1 EVALSO-SA1-1.1, "Technical Specification for the procurement of the EVALSO optical infrastructure"
- AD2 EVALSO-SA1-1.2, "Area Survey"
- AD3 "SCHEDULE, MANAGEMENT, AND TECHNICAL PROPOSAL", AXYS, MAY2009
- AD4 "INSTRUCTIVO SOBRE PARALELISMOS EN CAMINOS PUBLICOS" REPUBLICA DE CHILE, MINISTERIO DE OBRAS PUBLICAS
- AD5 "RESTRUCTURED OFFER", AXYS, August 19th, 2009, Section 2., Project Schedule

1.2 Reference documents

N/A

2 SCOPE

Scope of the contract is design and construction of an underground fibre between ESO/Paranal Observatory entrance Observatory (ref. AD2, 3.6) a location nearby the so called “La Varilla” crossroad, namely Ruta5/B710 crossroad (ref AD2, 3.3 & 3.4). This corresponds to the Item 1a, as defined in the SA1-1.1 Technical Specification (AD1).

In addition to any design and construction activity and the implied material, it is part of the contractor scope to apply for permissions and place the relevant financial securities with MOP and/or any other involved entities.

The procurement of this new fiber is part of the EVALSO Optical Infrastructure. More on the EVALSO project and is available in AD1, chapter 2. The expected complete EVALSO Optical Infrastructure is described in AD1, chapter 3.

3 PROJECT DEFINITION

3.1 Item Definition

Underground fibre laid down, parallel to B-710, between ESO/Paranal Observatory entrance Observatory (ref. AD2, 3.6) and a location nearby the so called “La Varilla”.

The item includes all needed sub-items (fibre cable, splice boxes, concrete man holes, end point cabinet, etc) as identified and specified in the “SCHEDULE, MANAGEMENT, AND TECHNICAL PROPOSAL” (ref. AD3, section 4)

The item shall comply with all requirements set in the SA1-1.1 Technical Specification for the Item 1a (ref. AD1, 3.1).

In the rest of the document, the terms “Item 1a”, “project”, “fiber” are considered synonyms of the above item definition.

3.2 Project Phases Definition

According to the revised schedule (AD5) the project is planned in three phases:

- Construction Readiness that includes all activities and deliverables needed to be able to obtain from the Chilean Authority (MOP) the ruling (approval or not) for the construction of Item 1a.
- Construction that includes all activities and deliverables needed for the successful Preliminary Acceptance of the fiber.
- Operation&Maintenance that includes all activities and deliverables needed for the successful operation of the fiber.

3.3 Project Schedule and Key Milestones

According to the revised proposal (AD5) the project schedule encompassed approximately two months. Assuming the contract signature as T_0 , key Milestones are:

- Kick-off Meeting (KoM) that will take place within $T_0 + 2$ weeks
- Preliminary Design Review (PDR) that will take place within $T_0 + 4$ weeks
- Final Design Review (FDR) that will take place within $T_0 + 9$ weeks
- Project Presentation to MOP that will take place within $T_0 + 10$ weeks

- Construction Start that will take place after receipt of MOP ruling (expected $T_0 + 4$ months)
- Provisional Acceptance that will take place after completion of all construction works and successful functional verification tests (expected $T_0 + 8$ months)

3.4 Deliverables

3.4.1 Deliverable Items

Items 1a in section **Error! Reference source not found.** and maintenance as defined in AD1sections 4.4 and 4.5 over the contractual period.

3.4.2 Deliverable Documents

Up to PA:

- Project Management Plan: draft 3 days before KoM, final as part of the PDR DP
- PA/QA Project Manual: draft 3 days before KoM, final as part of the PDR DP
- Complete set of Technical Specification of Item 1as needed for construction (specification, plans, attenuation verification, material lists, logistic, test plan and procedures, ...): draft as part of the PDR DP, final as part of the FDR DP. Update according to “as build” at PA.
- Copy of the set of documents that are submitted to MOP (Topographic Study and any other document as required by MOP Instruction as from AD4): FDR DP
- Copy of all correspondence between AXYS and MOP, including final authorization and any other relevant documents (boleto de garantia, etc): before Construction Start
- Construction report, verification test results, maintenance support instruction: at PA.

After PA:

- SLA report every 6 month, as defined in AD1, 4.5.2.
- Updated version of any delivered document that may result from the implementation of agreed changes.

The exact content and format of each document that is part of the two above defined sets will be defined at KoM and, for those documenting the construction after MOP decision.

3.5 ESO Undertakings

Within $T_0 + 4$ weeks, ESO shall confirm the exact location of the end points of the fibre.

On request and subject to availability, ESO can make available its own Videoconference facilities at the ESO offices in Vitacura, Santiago.

4 TASKS APPLICABLE TO ALL PROJECT PHASES

4.1 Project Management & Control

4.1.1 Project Management

- 1° The Project Management shall be separated from other projects and operations to the extent necessary to prevent interference with the effective and timely completion of the Contract.
- 2° The Contractor's Project Management Office shall coordinate and control the project resources, all technical and commercial activities, and manage all activities required to successfully complete the Contract.
- 3° The Contractor's PM is also responsible for the coordination of third parties needed for the preparation of the Data Package to be submitted to MOP, according to the requirements set in the instructions (AD4).
- 4° The Contractor shall identify a Project Manager that shall be the principal point of contact, and have full authority to deal with all matters relate to the contract, including but not limited to technical matters.

4.1.2 Project Plan

- 1° As part of the Project management Plan, the Contractor shall implement a Project Plan, identifying all activities and deliveries and their expected planned date.
- 2° Deviations from the Project Plan shall be reported to ESO, for approval insofar as such deviations may affect the contractual timeline, for information if not.
- 3° The Project Plan shall be updated or reconfirmed with each Progress Report.

4.1.3 Project Reporting

Project Reports shall be delivered by the Contractor at every key milestone and, every two weeks after FDR till PA.

The following reports are expected:

Project Reports shall be delivered by the Contractor at every key milestone and, if no milestones happen in between, every two weeks.

The following reports are expected:

- KoM Report $T_0 + 2\text{weeks}$
- PDR Report ... $T_0 + 6\text{weeks}$

- FDR Report T₀ + 10weeks
- Progress Report T₀ + 12/14/....weeks
- PA Report PA + 1week
- SLA Report PA + 6/12/... months

4.1.4 Progress Meetings

With the exception of the key Milestone related activities, no progress meeting are planned, although a progress meeting can be called by either party during the project execution. Unless physical presence in Chile is possible, all meetings will take place using video or tele-conference.

4.1.5 Project Reviews

For both PDR and FDR:

- the review Data Package (DP), as defined in 3.4.2, shall be submitted to ESO one week before the Review date
- ESO shall provide comments within the day before the Review date
- Review meetings will take place at Contractor premises and/or by Video Conference. At the review meeting, all comments are discussed and classified as:
 - Accepted
 - Rejected
 - To be Investigated (Action Items set to either ESO or the Contractor)
- Contractor shall deliver the P/F-DR Report within 3 working days from the venue.

4.1.6 Documentation

All documentation shall be delivered in electronic format as PDF and Source format (OFFICE 2003 compatible format) and in one signed paper copy.

Documents shall be numbered as "SA1.1-1.4-nnn", where "nnn" is a progressive number and bear the EVALSO and FP7 logos on the front page. A MS WORD example will be provided by ESO at T₀



The language for written documentation shall be English unless the documentation is intended to be delivered to MOP and Spanish is required. In such case a few pages executive summary in English shall be provided too.

4.2 Configuration Management

CM will be part of the overall PA approach and described in the PA Manual (see 4.3).

Over the duration of the project, the Contractor is requested to maintain an up to date Configuration Item Data List (CIDL) tracing the identifier and status of all documentation items. Copy of such list will have to be provided as attachment to every progress report or MoM.

4.3 Product Assurance

According to AD3, section 9, the Contractor shall develop a Project PA/QA Manual to be delivered as draft at KoM and final at PDR.

4.4 Accommodation and Services for ESO Personnel

N/A

4.5 Training

One training session shall be delivered by the Contractor to ESO personnel on the modality to notify operational problems and to request maintenance.

4.6 Dissemination and Public Outreach

The requirements set by AD1 section 4.9 fully apply.

5 ACCEPTANCE PROCEDURE

The PA of the fibre will take place after that all construction works have been completed. The PA will be granted both on the basis of the evidence of the construction activities (records, drawings, physical inspections, etc) and the measure of the actual parameters (attenuation, etc) of the fibre, according to the verification and acceptance test plan.

No SLA is applied until the overall PA milestone is reached. After PA milestone, the system is considered in operation and the SLA will be fully in place.