



Enabling
Virtual
Access to
Latin-American
Southern
Observatories

<http://www.evalso.eu>

Work Package: **SA1 – Link Upgrade**

Deliverable No: **SA1-2.2**

Deliverable Name: **Tender Result -
Part II: DWDM Equipment**

Date: **2010/05/20**

Nature¹: **REPORT (R)**

Dissemination Level²: **PP**

Abstract

This document reports on the tender results of the SA1 EVALSO Communication Infrastructure. Accordingly to the adopted procurement strategy, the report is structured in two documents, namely:

- Optical Infrastructure, by ESO and OCA (see Part I)
- DWDM Equipment, by REUNA (This document)

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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1 Purpose and Scope

This document summarizes the results obtained in the DWDM equipment procurement process developed by REUNA on behalf of EVALSO project. It briefly explains the tender process and gives the main technical aspects of the solution awarded.

2 Tender process summary

Following table show the timetable of the tender process:

	DATE	TIME	VENUE
Preparatory Session	December 2009		VIRTUAL
Tender Forecast Publication ⁴	04/01/2010		
Delivery of Tender Dossier to the interested companies ⁵	03/02/2010		VIRTUAL
Clarification period	03 Feb to 05 Mar 2010		VIRTUAL
Deadline for submission of proposals ⁶	12/March/2010	19:00 GMT	REUNA, Santiago, Chile
Tender opening session	17/March/2010	19:00 GMT	REUNA, Santiago, Chile
Evaluation Session 1	18/March/2010	12:00-21:00 GMT	REUNA Santiago, Chile
Evaluation Session 2	19/March/2010	12:00-21:00 GMT	REUNA Santiago, Chile
Clarification meetings 1	19/March/2010	18:00 GMT	REUNA Santiago, Chile
Clarification meetings 2	23/March/2010	13:00 GMT	REUNA Santiago, Chile plus Virtual
Clarification meetings 3	24/March/2010	18:00 GMT	REUNA Santiago, Chile plus Virtual
Reception of the confirmation of the economical offer	16/April/2010	21:00 GMT	REUNA Santiago, Chile
Notification of award to the companies	20/April/2010	-	
Purchase order	10/May/2010	-	

⁴ Publication in media of the Invitation to Tender ITT

⁵ Publication on the REUNA web site (access limited to Companies that expressed ITT) of the technical and contractual documentation for the tender process

⁶ The original date was 05th/March but due to the earthquake in Chile this date was postpone in one week

The Tender Dossier was written during the Preparatory Session, the author was REUNA but with the revision of the members of SA1 activities (ESO, Trieste University, Bochum University). The documents were published in English and Spanish (this was the official version). The documents generated were:

- EVALSO Invitación a Licitar v1.5
- Anexo B Infraestructura de enlaces de EVALSO
- Anexo C Diagrama de Equipos Solicitados

- EVALSO Invitation to Tender v1.5
- Annex B EVALSO Link Infrastructure
- Annex C Diagram of equipment required

The Tender Dossier was delivered to companies that expressed interest to the ITT via Internet site <http://www.reuna.cl/evalso-equipos/> protected with a user/password pair (see Annex 1). In this site were published also all the documentation exchanged with the companies. The following table shows the list of companies interested in the ITT

Company	Main Contact Name
Alcatel-Lucent	Julio Coliboro
Padtec	Pablo Prieto
Infinera	Hugo Perez
Ciena - Adexus	Alex Ponce
Huawei	Andres Cruz
AdvaOptical	Allan de Souza
Magenta	Pedro Paiva
NetworkHardware Resale	Kai Jolli
GenesisDat	Jaime Rueda

During the evaluation process the Reception and evaluation of proposal were done. The evaluation committee was composed by:

Name	Affiliation /Position	Role in Evaluation Committee
Fernando Liello	University of Trieste / EVALSO Director	Evaluator
Florencio Utreras	CLARA / Executive Director	Evaluator
Sandra Jaque	REUNA / Manager of Technology and Operation	Chair and Secretary
Gustavo García	CLARA / Technical Manager	Observer

The companies presenting proposals were:

- DATCO representing PADTEC
- ADEXUS representing CIENA
- IBM representing ADVA Optics
- HUAWEI

Huawei was rejected during the administrative phase because was unable to comply with the tender administrative requirements, the remaining (DATCO, ADEXUS and IBM) passed to the technical evaluation. All proposals complied with the requirements.

The economical analysis considering hardware, software, installation, training and guarantee plus maintenance for 5 years, resulted in the ADEXUS proposal offering CIENA equipment, to be the most advantageous.

The offer was fully compliant with the tender specifications and was the most economic in absolute by about 7%

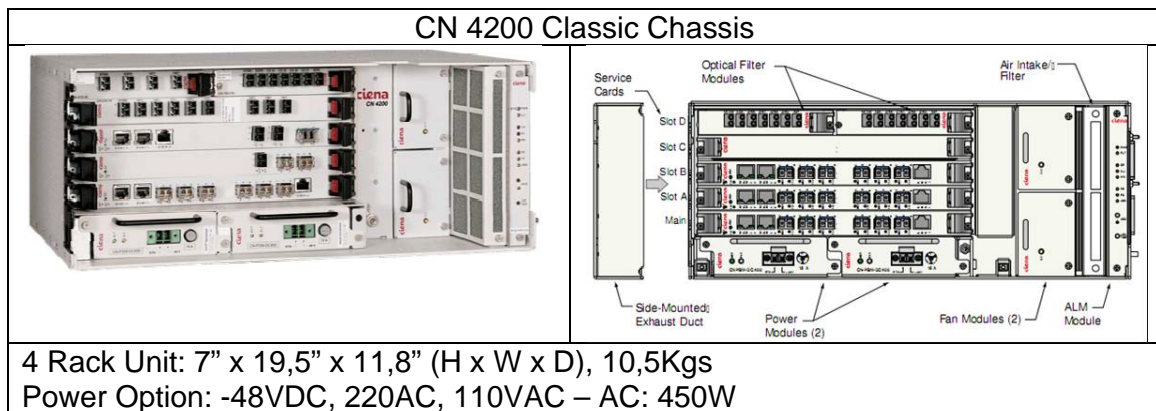
3 Brief Description of the equipment selected

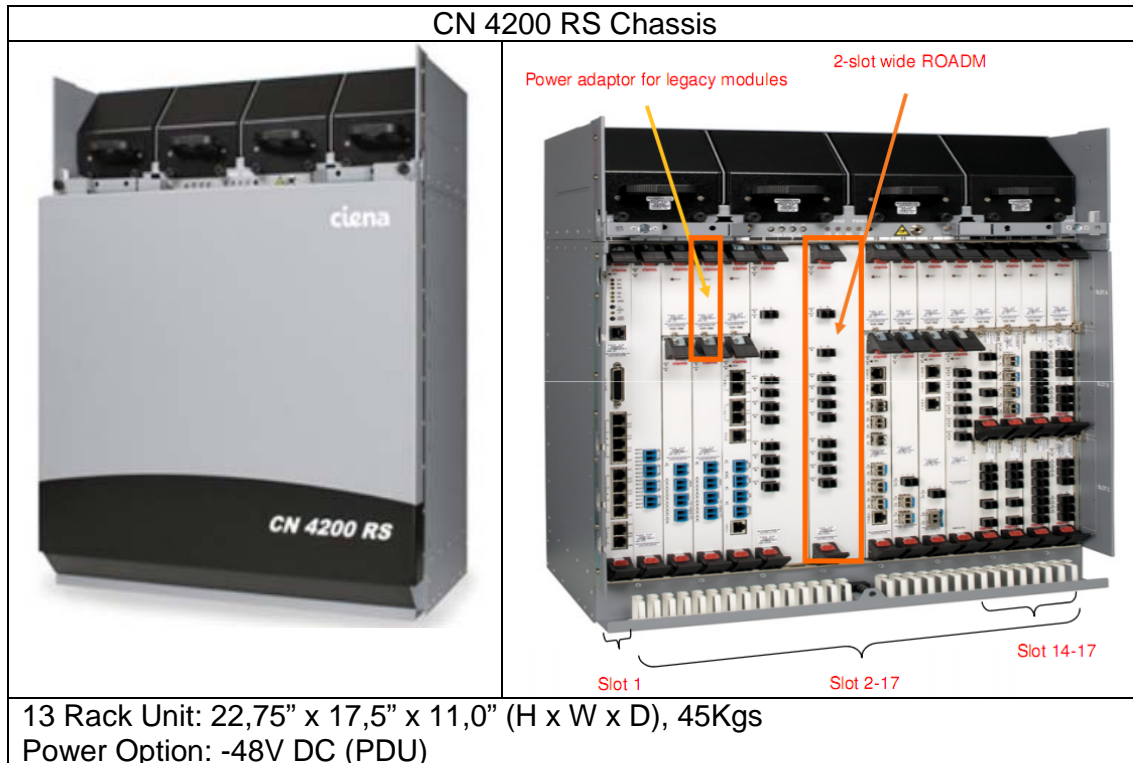
Equipments manufacturer: CIENA (www.ciena.com)

Company giving the services: ADEXUS (www.adexus.cl) Chilean company with a long history in IT solutions, has offices in main cities in Chile one of them are Santiago and Antofagasta.

Equipments Family: CN 4200

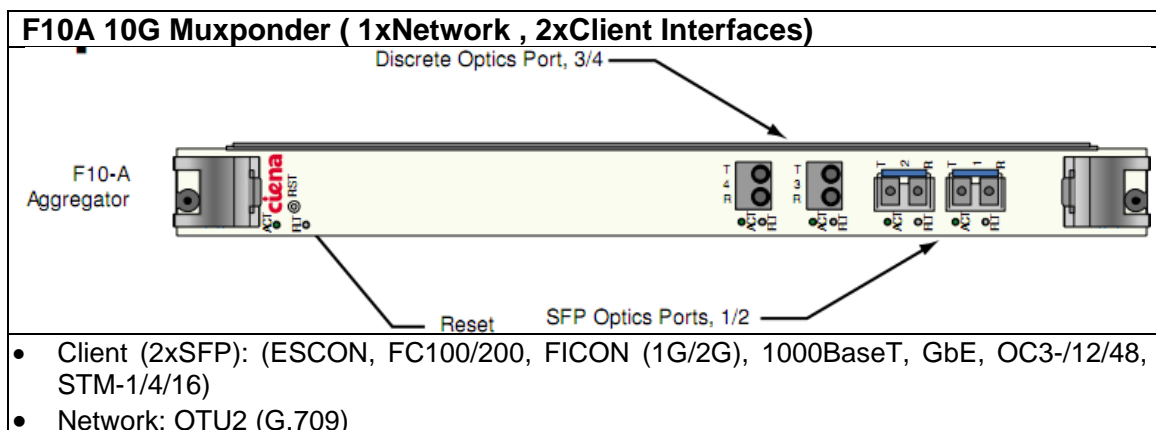
Chassis: There were selected two kind of chassis, classic one (4 slots) for ESO/Paranal, ESO/STGO, REUNA/STGO and RS (17 slots) for REUNA/Antofagasta and TELCO PoP/STGO, following pictures show both chassis.



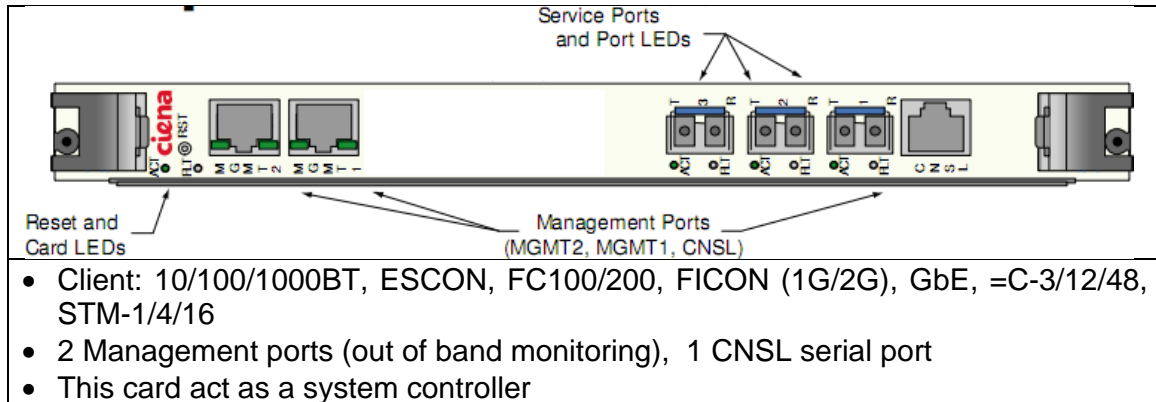


In the sites of Antofagasta and Paranal there is also an additional small chassis (CN 2110) to host the module of Chromatic Dispersion Compensation. CN 2110, 4 slots 1U, non active chassis.

Interfaces: There are three kind of interfaces involved in the solution. The interface face the network or Telco side (F10A interface) and the interface facing the client side (ESO, REUNA, etc.) (M3 and G10 interface).



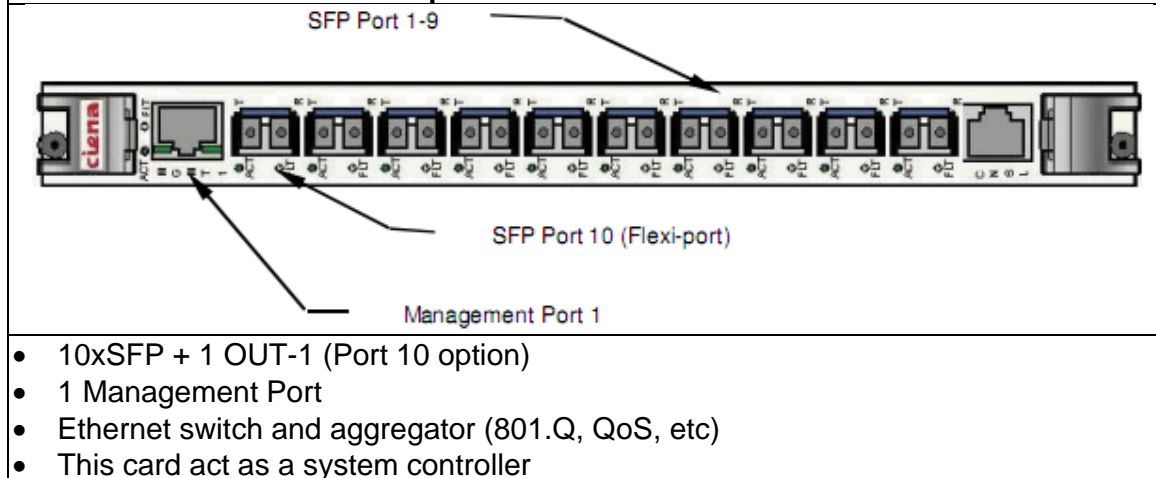
M3 Multi-Service 2.5G Aggregator (3xClient Interface)



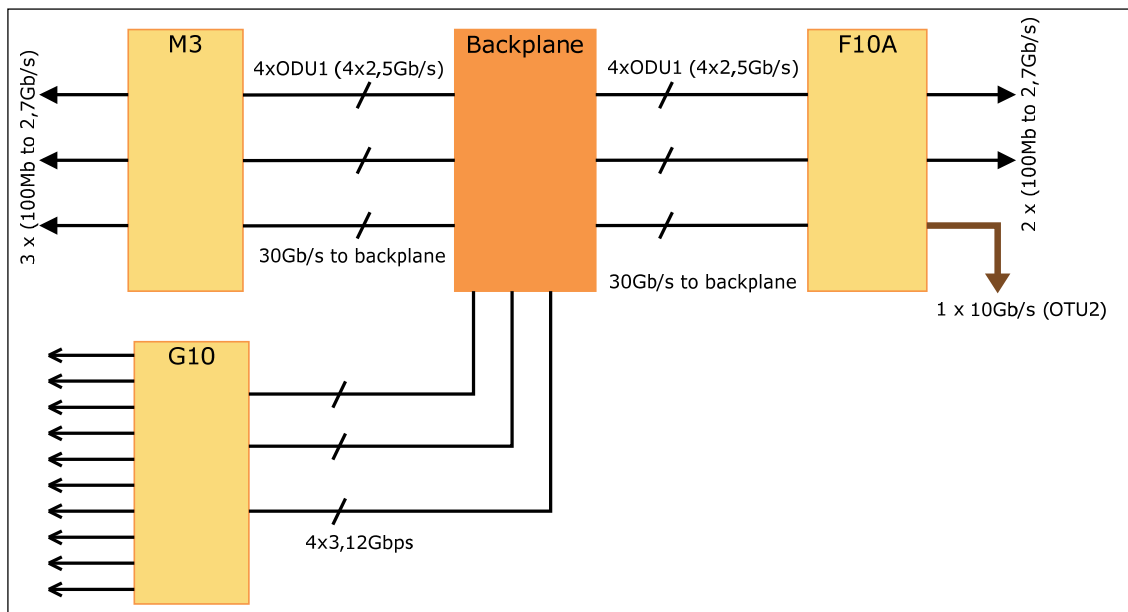
SFP supported by both type of card:

- 100m 1000BaeT (electrical)
- 200m @ 1310nm (MMF) ESCON only
- 300/500m @ 850nm (MMF)
- 10-35Km @1310nm (SMF)
- 90/120Km ITU CWDM
- 90/129Km ITU DWDM

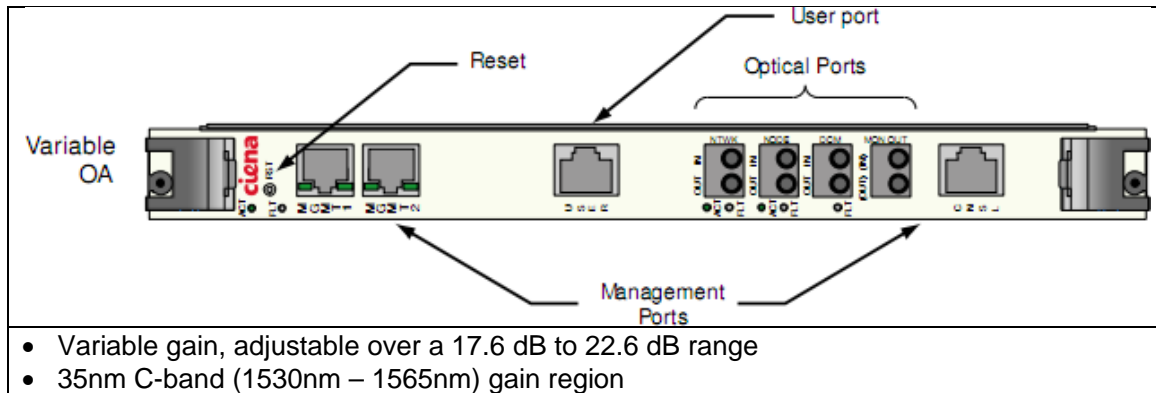
G10 Ethernet Switch and Muxponder



F10A, M3 and G10 interconnect each other by the backplane of the equipment. Following is a general block diagram of this interconnection.



Amplifier: There is an amplifier in the link from Antofagasta to Paranal, the proposal incorporates an OAV Variable optical amplifier.



4 Byfaces by node

Antofagasta

CN 2110 (4 slots, 1U)			
DCM		IN/OUT	
CN 4200 RS (17 slots, 13U)			

Paranal

CN 2110 (4 slots, 1U)			
DCM		IN/OUT	
CN 4200 (5 slots, 4U)			
OAV		IN/OUT	
F10A	OTU2	GE1 - GE2	
M3	GE1 - GE2 - GE3		
Power (2x220V AC)			

Santiago (Telefonica POP)

CN 4200 RS (17 slots, 13U)			
F10A	OTU2	GE1 - GE2	
F10A	OTU2	GE1 - GE2	
F10A	OTU2	GE1 - GE2	
Power (2x220V AC)			

Canadá/REUNA

CN 4200 (5 slots, 4U)			
F10A	OTU2	GE1 - GE2	
F10A	OTU2	GE1 - GE2	
M3	GE1 - GE2 - GE3		
Power (2x220V AC)			

Vitacura/ESO

CN 4200 (5 slots, 4U)			
F10A	OTU2	GE1 - GE2	
F10A	OTU2	GE1 - GE2	
M3	GE1 - GE2 - GE3		
Power (2x220V AC)			

5 Services

In term of services, in the Tender Dossier was requested installation, training, guarantee for 5 years and maintenance. All the services are being contracted.

The training activity will be in REUNA offices and the content offered is:

- Introduction to CN 4200 system, 3hrs.
- CN4200 Hardware, 5hrs.
- CN 4200 Operation, 4hrs.
- Local Management of the system, 3hrs.
- Provisioning, 5hrs.
- Maintenance and monitoring of CN 4200 system, 7hrs.
- Troubleshooting, 5hrs.

Maintenance service: 7x24

Annex 1

Tender website

