# THE SARDINIA RADIO TELESCOPE: e-VLBI prospects in Sardinia

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## Talk outline:

- a) Status of the radio telescope construction
- b) Instrumentation development
- c) e-VLBI infrastructures

## a) Status of the radio telescope construction

		SF	RT SCH	EDULE	PLA	N FA	BRIC	ATIC	DN, T	RA	NsPo	DRT	, Er	ecti	on,	Pan	el li	nsta	allat	ion	& P	lan	ts									SRT-P
																	20	80						20	09							
Tite	Duration	Start	Finish	2005	05 05	07 08 0	9 10 1	1 12 01	02 03 0	04 05	06 07	08 09	10 11	200 12 01	08	3 04 0	5 06	07 05	8 09	10 11	12 0	1 02	03 04	05 06	07 0	e0 8.	10 11	12	2010	03 0	4 05	06 07 08
ERECTION	1019 dys	Mon 06/02/06	Thu 31/12/09	-			-					-																100				
Track preweiding and preparation	72 dys	Man 06/02/06	Tue 16/05/06		Trac	k preweiding	g and pre	paration									1		ii i		i				100							
Site transfer	56 dys	Wed 17/05/06	Wed 02/08/05			Site t	ransfer	1.55		-			4		+	+	1		1		i I		- 1-1			4	$\vdash$			$\vdash$	+	
Track, accembly and weiding	185 dys	Thu 19/06/06	Wed 16/04/07	++++						Track	c, accomb	iy and we	siding	_	1 1	11.	-	-					$\rightarrow$	-	+	+	++-	+ +		++	+	++
Track grouting, hardening, prestress	56 dys	Thu 02/08/07	Thu 18/10/07		+ +		++			-		Greater	Track	aroutin	ic hards	nino, pr	stress	+						-	1 1	+	$\vdash$	+		++	++	++
Track Machining, Final measurement	47 dys	Man 07/07/08	Tue 09/09/08				+ +					1.1	111		1 1	1	1		-	ok Mad	ohining, I	Final m	eacuren	ent		+	++	+		++	++	++
Track final acceptance	0 dys	Tue 09/09/08	Tue 09/09/08													+ +			5	8018	1	11	11				$\vdash$	+		$\vdash$	++	
Pintle Bearing and Az. Cable wrap, hardening	130 dys	Mon 16/04/07	Frl 12/10/07							1000			Pintiel	Bearing	and Az.	Cable v	rap, ha	rdening							100	1		++			++	
Alldade	225 dys	Thu 22/11/07	Wed 01/10/08																		!				100	8 8		10	121 3			
Erection	105 dys	Thu 22/11/07	Wed 16/04/08										Г	1989	1.1	En	otion				1								231-3			
Welding	150 dys	Thu 20/12/07	Wed 16/07/08				11	100					4	+	1997 - B. 19	and the second	A  = 0	Wel	dinja	23					100				222			
Alignment upper part, welding	43 dys	Thu 17/07/08	Mon 15/09/08		1 1		11												14	Ignmer	nt upper	part, w	eiding			2		13				
Meacurement, weighting	12 dys	Tue 16/09/08	Wed 01/10/08				++							-		++				Meacu	irement,	weight	Ing			_	$\vdash$	+		$\vdash$	$\rightarrow$	
Alidade acceptance	0 dys	Wed 01/10/08	Wed 01/10/08				11				ЦЦ				11	11				01-10			1 1			1	1			<u> </u>		
Est which, phow block, anyo	100 Uy6	Man 20/10/08	Fil #3/13/08						44		44			_	+ +	++	4			1	Le la	al Dra	1 I			and the local diversion of		+		<u> </u>		
Exection on Alidade	40 Uys S5 due	Mon 10(11/09	Fil 23/01/09		11	$\square$	++	+	$\square$		44	11			++	++	4		11	The second se				, on gro	unu, par	we we	- ing	누구	+-	$\vdash$	╇╋	++-
Welding	20 dys 70 dys	Mon 26/04/09	EX DUDE/DE				++			++		++			++			-	# +					-		+	$ \vdash $	++	+	-+-	++	
ballast concrete	5 dvs	Mon 04/05/09	Fri 08/05/09		++		++			++		++	+		++	++		-	# <del> </del>	-	!	<u> </u>			++	+	-+	++	+	+	++	
El.Wheel Acceptance	0 dys	Fri 08/05/09	Fri 08/05/09							+ +		++	++					-	11	-	!	+ +		COB/04	6	++	F	++	+	$\rightarrow$	++	
remaining works	50 dys	Mon 11/05/09	Fri 17/07/09		++		++			++		++						+	**		•	+ •		-	ren	maining	g works	+	+	+	++	
BUS	360 dys	Mon 12/05/08	Fri 26/08/08									++							di te							ain a'		+	+	-+	++	
Assembling on ground, adjusting	150 dys	Mon 12/05/08	Fri 05/12/08				++							1 3	++	1 1	-	_	-		Accer	philde	on groun	nd, adju	sting		$\square$	H			++	
welding on ground	80 dys	Man 08/12/08	Frl 27/03/09											20 3			11	1			1	-	weld	ing on (	ground	+ +		+			++	
Geometrical Acceptance on ground	0 dys	FH 27/03/09	Fri 27/03/09									++		02 3					111				27.	13		++		+			++	
Lifting, connecting, weiding	50 dys	Mon 11/05/09	Frl 17/07/09		11					11		11		S. 3	11	1 1	11	-	11						h	++		+			++	
BUS acceptance inner	0 dys	Frt 12/06/09	Fri 12/06/09							10				Q 2						6 88				-	12/08					1	11	18 18
BUS Final acceptance	0 dys	Wed 26/08/09	Wed 26/08/09		11									89 3					111		1	1				28	/08	$\square$			11	
remaining works	50 dys	Man 20/07/09	Frl 25/09/09											23 3													remainin	ng wor	/ks		TI	
Guadripod	202 dys	Tue 16/12/08	Wed 23/09/09																				1.1			-						
Erection Apex on ground	15 dys	Tue 16/12/08	Mon 05/01/09											23 3						194		eation	Apex of	n groun	<b>4</b>		1.1.1			4		
Erection Agex Incl. SR,PFP on BUS	12 dys	Mon 15/06/09	Tue 30/06/09				+						$\rightarrow$	523 13				_	11	100					Srboti	on Ape	x Inol. S	R,PFP	on BUS	4	4	
Erection Quadripod legs	a dys	Moh 20/07/09	Wed 29/07/09							-		_		28 - 18				_	11					11				$\downarrow$			$\downarrow$	
Quadripod Acceptance	0 dys	Wed 29/07/09	Wed 29/07/09		1 1			+		11		11		a. 8	++	1	+ +	_	# 1					1	1 <b>4</b> -	28/07	- Internet	1	-+	-	+	
Part of works	40 Uys	Map 22/12/09	Ext 19(12/09/09		++		+ +	+		-	++			-	++	+ +	+ +	-	# +	-							/emailini	ig woel	AD	-+-	++	++-
beamoulde	165 dys	Mon 22/12/08	Fri 07/08/09		++		++			-		++			++		++	+	-							beamo	uide		-	+	++	
Beam guide acceptance	0 dvs	Fri 07/08/09	Fri 07/08/09		++		++	+		+ +		++			++		+ +	+	# +	-			1.1	- 1	1 1	07/08	AH-	+	+	-+-	++	
painting	100 dys	Thu 18/06/09	Wed 04/11/09		++		++	+		+ +		++		52	++	+ +	++	+	***	100			++		Second Second		_	+	++	-+	++	++
cervo cabling	20 dys	Mon 31/08/09	Fri 25/09/09				++					++		0.0		+ +			11						1		servo ce	abling			++	
cervo installation, El/Az	35 dys	Mon 24/08/09	Fri 09/10/09		11		11			11		11	11	9 33	11	1 1	11	1	111	139				1	1 14		Gervo	Install	lation, E	NAz	11	18 18
cervo, final commissioning	50 dys	Mon 12/10/09	Fri 18/12/09		11		11					11		89 3		1 1			111								In the second se	<u> </u>	srvo, fin	al comr	niccion	ing
Servo main movement tests	5 dys	Thu 05/11/09	Wed 11/11/09											X3 - 3	TT	TT			ПТ					T				iervo n	nain mo	vement	tests	
Servo appeptance	0 dys	Wed 11/11/09	Wed 11/11/09																									11/1				
									84 - 1					88 - <u>8</u>						8 - 1924 1924			1924									
subreneotor	161 dys	Mon 01/08/08	Mon 13/04/09											39 8								r 1						1			11	- 3- 3
Liesign, Fabrication, erection site installation frame	80 dys	Mon 01/09/08	FH 19/12/08		$\vdash$					+				23 3	++	++		-	-	-	Dec	an, Fa	iprication	i, erect	on site li	netaila	uon fran	ne	$\square$	-+-	++	
erection subretector on ground Installation Aney, SO Day, SD late site frame	30 0ys	Tue 16/12/08	Mon 22/02/09		++					++	++	++	-	20	++	+	+ +	_	#			PERIO	notalitativ		an grou		no etter	hand	+	+	++	
Panel Installation prealignment	20 dys	Tue 24/02/09	Mon 23/02/09		++		++					++			++	++		_	# +	-		-	Pane	Unctal	dian or	Can lon	ment	+	$-\mu$	-+-	++	
Panel allorment 45'	15 dys	Tue 24/03/09	Mon 13/04/09				++			++		++		2000 - 20 20 - 20	++		++	+	#+		!		Te	mai allo	nment 4	46		++		÷	++	
Cardo argentes se							++			+ +		++		20 2	++			+	# +		!			1	1 1	-		<u>+</u> <b>+ +</b>	+	-+	++	
Main Reflector	234 dys	Mon 09/02/09	Thu 31/12/09		++		++			+ +		++	+		++			-	**		!						des a second	ta da		+	++	
Installation of actuator pads, prealignment	25 dys	Mon 09/02/09	Frl 13/03/09															-	**			1	Installa	ation of	actuator	r pade,	prealign	ment		-+	++	
Alignment of actuator pads	35 dys	Thu 09/07/09	Wed 25/08/09											3 8					11		!	1			4	H					++	
Installation of actuators, cabling	25 dys	Thu 13/08/09	Wed 16/09/09											22						100					4	6					++	
Panel Installation	28 dys	Thu 17/09/09	Mon 26/10/09																								TH					
Panel alignment for 45*	20 dys	Tue 27/10/09	Mon 23/11/09											9 B																1		
Alignment main-sub-reflector; look up table	28 dys	Tue 24/11/09	Thu 31/12/09											68 8						123											11	
	Section 2	las galand	i na ser a ser											13 1														ĻĮ				
Plants	250 dys	Mon 17/11/08	Fri 30/10/08				11			11	11	11		23 8	11	11			μĻ	_						the last	TY.	ĻΨ	Ц	1	44	
capie trays	180 0/5	Mon 17/11/08	PR 24/07/09		ĻĻ		1	11		11		11		2. 8	ĻĻ	ĻĻ	1		11			-			Joal	ale tray	1			<u> </u>	ΗĻ	
power distribution	65 dys	Mon 29/06/09	PR 25/09/09				+						-	<u>, 1</u>				_	11	100		1		14		-	oower d	NETTING	ción	1	1	
Locing system installation	25 0ys	Mon 14/09/09	Fill Sur Turde		++			+		++		++		23	+			-	# +								Lipst	oshile	y miner	munt of	antroi	
halast course dealers fabrication argetters	60 dys	Mon D9/03/09			++						+	-		3	+		++	_	# #	-		-		-	I last one	ant der	sion fate	-institution	ararit	- tot		
earlier cerer, earlyn idenearen, ereceen	00.035	Wall as as a	111 23/05/05		++		++			+		++		-	++	++	++	-	# +	-		+ 1	11	- ua	1 1	-1.000	-gri teuf)	1	, si dode	<u></u>	++	
Taking over	0 dys	Thu 31/12/09	Thu 31/12/09				++			++		++						-			++	+ +		+		+	-+	1 📸	31/12		++	
	0.000	1094021070906-800	and the second second second	<ul> <li>as 1000 s</li> </ul>		<ul> <li>Formulation</li> </ul>										- F			1000			- 1			1.1			· · · · ·			4 1	100 D.C.





#### Bus assembling on ground: June – December 2008 –timeline --Ok!

			SF	RT_ SCH	EDUL	E PLAI	N FABRIO		N, TRANS	sPORT , E	Erecti	ion, Panel I	nstallat	on &	Plants					SRT-PI
												20	800		2	009				
	Tite	Duration	Start	Finish	2006	04 05 05	07 08 09 10 1	2007	03 04 05 06	07 08 09 10 1	1 12 01	08   02   03   04   05   06	07 08 09 1	11 12	2009 01 02 03 04 05	06 07 08 09	10 11 12	2010	04 05	05 07 08
#	ERECTION	1019 dys	Mon 06/02/06	Thu 31/12/09	-															
+	Track preveiding and preparation Site transfer	72 dys 56 dys	Wed 17/05/06	Tue 16/05/06 Wed 02/08/06		Traok	Site transfer	paration												
#	Track, accembly and welding	185 dys	Thu 03/08/06	Wed 18/04/07					Track, as	sembly and welding										
+	Greace remove and concrete restoration Track grouting, hardening, pre-trees	75 dys 56 dys	Thu 19/04/07 Thu 02/08/07	Wed 01/08/07 Thu 18/10/07		+				Greace remov	e and conc ok.groutin	prete restoration							+	
1	Track Machining, Final measurement	47 dys	Man 07/07/08	Tue 09/09/08										ok sohini	g, Final measurement					
7	Track final acceptance	D dys	Tue 09/09/08 Mon 16/04/07	Tue 09/09/08							la Rearing	and Az Cable was h		60						
+	Alldade	225 dys	Thu 22/11/07	Wed 01/10/08																
1	Erection	105 dys	Thu 22/11/07	Wed 16/04/08							r	Erection								
+	Alignment upper part, weiding	43 dys	Thu 17/07/08	Mon 15/09/08					+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$				weicing	anm nt up	er part, weiding		++-			
1	Measurement, eighting	12 dys	Tue 16/09/08	Wed 01/10/08							i			Meas rema	nt, weighting		11		<u>i</u>	
+	Alidade scoop ance	0 dys 195 dys	Wed 01/10/08	Wed 01/10/08 Erl 17/07/09										<del>- 01</del> 4						
+	Partial Presidentity on ground, partial welding	40 dys	Mon 20/10/08	Fri 12/12/08							++				artial Preascembly on	ground, partial web	ding			
ЦŤ	Erection of Alidade	55 dys	Mon 10/11/08	Fri 23/01/09							1								11	
H	balast o norete	70 dys 5 dys	Mon 26/01/09 Mon 04/05/09	Fri 01/05/09 Fri 08/05/09		++						+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$					++		+	
H	El.Why A Acceptance	0 dys	Fri 08/05/09	Fri 08/05/09												8/06				
П	Bulle .	50 dys	Man 11/05/09	Fri 17/07/09												remaining	works	-		
H	Assembling on ground adjusting	150 dys	Mon 12/05/08	Fri 05/12/08		+++									sembling on ground, a	djusting	++	+++	+	
Ц	welding on ground	80 dys	Man 08/12/08	Fil 27/03/09							100				weiding	on ground				
H	Geometrical Acceptince on ground	0 dys 50 dys	Mon 11/05/09	Fri 17/03/09		+++		+ + + -			<del>   </del>	+ + + + + + + + + + + + + + + + + + +			27431		++	+++	++	
	BUS acceptance inner	0 dys	Fri 12/06/09	Frl 12/06/09							10					12/08				8
Н	And the Party of t	the the														28/0	emaining wo	rks	+	
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H	and the second s	A CONTRACTOR OF						Parties.	-						Election Apex on gro	Stration Area	Inol 18 PE		$\square$	
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П					f A		A Sector									4	cervo insta	lation, EVAz		Inc
H	and the second s	the les	Ax 2 4		1 11 1	Ally	ADDRESS !!	These	( All and a second		1						Servo	main moveme	nt tests	
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Ħ	THE STATE	States -	227 Y		1 and 1	S- 5	a the			ACC	1				Decign, Fabrication, er	ection site installat	on frame			
Н		En ZE					A West	MP			-	++++			Erection Subrefle	otor on ground	 o site frame	+++	+	
H		1 Sant	SEA	in al	<b>U</b> SKI	12	- rite	and the second							Panel Inc	tallation, prealignm	ent		++	
H	- 1-2					2			-			++++			Ranel	alignment 46				
H		Today.	- Harris	States -	The sea	- All Carl	- Str				++-	+							+	
	the second	-	T	THES	CALL P			-	*	and the second s					Installation	of actuator pade,p	realignmen			
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H	and the the state of the state	12170	· Car	The second	and the second		2-3-	1	1.192							Candet Cover, Cech	gri letriodile	, oreducin		
	Taking over	0 dys	Thu 31/12/09	Thu 31/12/09		1 1 1					100			22				\$1/12		



			SR	RT_SCH	EDULE PLAN FABRICATION, TRANsPORT , Erection, Panel Installation & Plants	SRT-P
		•			2008 2009	
2	Tite	Duration	Start	Finish	2009 2010 01 02 03 04 05 05 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03	3 04 05 06 07 08
-	ERECTION	1019 dys	Mon 06/02/06	Thu 31/12/09		
_	Track preweiding and preparation	72 dys	Mon 06/02/06	Tue 16/05/05	Track preveloing and preparation	
_	Site transfer	56 dys	Wed 17/05/06	Wed 02/08/06		
_	Track, accembly and welding	185 dys	Thu 03/08/06	Wed 18/04/07	Trock, accembly and welding	
_	Greace remove and concrete restoration	75 dys	Thu 19/04/07	Wed 01/08/07	Greace remove and concrete rectoration	
-	Track Machining, Final manufacture	47 dys	Map 07/07/08	Tue 79/09/08	eekk Auduling, instructing, proceeder	
-	Track final acceptance	D dys	Tue 09/09/08	Tue 09/09/08		
-	Pintle Bearing and Az, Cable wrap, hardening	130 dys	Mon 16/04/07	Frl 12/10/07	Pinte Bearing and Az. Cable was, hardening	++++
-	Alldade	225 dys	Thu 22/11/07	Wed 01/10/08		1111
-	Erection	105 dys	Thu 22/11/07	Wed 16/04/08		1111
-	Welding	150 dys	Thu 20/12/07	Wed 16/07/08		
_	Alignment upper part, weiding	43 dys	Thu 17/07/08	Mon 15/09/08	land in the second s	
_	Measurement, weighting	12 dys	Tue 16/09/08	Wed 01/10/08		
_	Alldade acceptance	0 dys	Wed 01/10/08	Wed 01/10/08		
_	El. Wheel, pillow block, drive	195 dys	Mon 20/10/08	Fri 17/07/09		
_	Partial Preassembly on ground, partial welding	40 dys	Mon 20/10/08	Fil 12/12/08	Hand a second seco	
	Erection on Alidade	55 dys	Mon 10/11/08	FR 23/01/09		
-	weiging halast concrete	Fullys 5, due	Mon 26/01/09	FRI 01/05/09		++++-
1	El.Wheel Acceptance	0 dys	Fri 08/05/09	Fri 08/05/09		+++++
	remaining works	50 dys	Mon 11/05/09	Fri 17/07/09	remaining works	
1	BUS	360 dys	Mon 12/05/08	Fri 26/08/08		+++++
T	Assembling on ground, adjusting	150 dys	Mon 12/05/08	Frl 05/12/08	A seembling on ground adjusting	
	welding on ground	80 dys	Mon 08/12/08	Fri 27/03/09		
	Geometrical Acceptance on ground	0 dys	Fri 27/03/09	Fri 27/03/09		
2	Lifting, connecting, welding	50 dys	Mon 11/05/09	Frl 17/07/09		
	BUS acceptance inner	0 dys	Fri 12/06/09	Frl 12/06/09		
	BUS Final acceptance	0 dys	Wed 26/08/09	Wed 26/08/09		
-	remaining works	50 dys	Mon 20/07/09	Fill 25/US/US	remaining worke	
	Exercise Association	15 due	Tue 16/12/08	Mon 05/04/09		┽┽┼┼┼┼
-	Erection Ages incl. SR PEP on BUS	12 dys	Mon 15/05/09	Tue 30/06/09	- Station Apple 1 - Station Apple 2 - Station Ap	+++++
-	Erection Quadripod legs	8 dys	Mon 20/07/09	Wed 29/07/09		
T	Quadripod Acceptance	0 dys	Wed 29/07/09	Wed 29/07/09		
1	remaining works	40 dys	Thu 30/07/09	Wed 23/09/09	remaining works	+++++
	Rect of works	260 dys	Mon 22/12/08	Fri 18/12/09		
T	beamguide	165 dys	Mon 22/12/08	Fil 07/08/09		
2	Beam guide acceptance	0 dys	Frl 07/08/09	Fri 07/08/09		
	painting	100 dys	Thu 18/06/09	Wed 04/11/09		
	cervo cabling	20 dys	Mon 31/08/09	Fri 25/09/09	Acros abling	
	cervo installation, El/Az	35 dys	Mon 24/08/09	Fri 09/10/09	Party and the second	
-	Serve main movement tests	50 dys	Thu 05/11/09	Wed 11/11/09		sommissioning
-	Serve appendance	D dys	Wed 11/11/09	Wed 11/11/09		
5			These the times			
Ť.	Subrefleotor	161 dys	Mon 01/08/08	Mon 13/04/09		
	Design, Fabrication, erection site installation frame	80 dys	Mon 01/09/08	Frl 19/12/08	Lesson, fabrication, erection atte induited on frame	
	Erection Subreflector on ground	30 dys	Tue 16/12/08	Mon 26/01/09		
8	Installation Apex, SR Pos., SR Into sile frame	20 dys	Tue 27/01/09	Mon 23/02/09	Installation Apps. 3R Pos. BR Into ette frame	
2	Panel Installation, prealignment	20 dys	Tue 24/02/09	Mon 23/03/09	A A A A A A A A A A A A A A A A A A A	
	Panel alignment 45*	15 dys	Tue 24/03/09	Mon 13/04/09		
	Mala DeBasies	001.0-0				
-	installation of actuator parts preatigement	234 Gy6 25 due	Mon Deinz/De	Fil 13/72/09		++++
	Allonment of actuator pads, preakgritterik	35 dys	Thu 09/07/09	Wed 26/08/09		++++
	Installation of actualors, cabling	25 dys	Thu 13/08/09	Wed 16/09/09		+++++
÷.	Panel Installation	28 dys	Thu 17/09/09	Mon 26/10/09		+++++
Î	Panel alignment for 45"	20 dys	Tue 27/10/09	Mon 23/11/09		
3	Alignment main-sub-reflector; look up table	28 dys	Tue 24/11/09	Thu 31/12/09		TITI
	- PU1905	Section 1	les manured	i-mana-i		
	Plants	260 dys	Mon 17/11/08	Fri 30/10/09		
Ľ	cable trays	180 dys	Man 17/11/08	Frl 24/07/09		
	power distribution	65 dys	Mon 29/06/09	Fri 25/09/09		
2	cooing system installation	25 dys	Mon 28/09/09	Fit 30/10/09		tailation
	max, cabing minor syst. Control balant course dealer fabrication area	20 dys	Mon 14/Us/09	EX 20/06/00	net, osoinp minor sy	
-	basasi cover, besign fabrication, erection	en als	Mail Calcarda	Fil 25/05/09		
1	Taking over	0 dys	Thu 31/12/09	Thu 31/12/09	→ + + + + + + + + + + + + + + + + + + +	
		1 2012 C 1016	<ul> <li></li></ul>	A REAL PROCESSING AND A REAL OF	, a non er a ne nennen af ne ne net er ne hennen er it he nen er ne nennen er under nen it af hellen er he heter 🕶 de de 🕶 de de 🚾 de de 🚾 de de 🗰 de	on the second second

Receivers

Back-ends

Metrology

Site Monitoring

**VLBI** capabilities

Software correlator

Receivers

**Back-ends** 

Metrology



Dual frequency (300 MHz / 1400 MHz) coaxial receiver

...and higher frequency receivers are on the agenda !

Receivers

Back-ends

Metrology

Site Monitoring

**VLBI** capabilities

Software correlator



Multipurpose digital spectrometer



ATNF Pulsar Digital Filterbank

Receivers

Back-ends

Metrology

Site Monitoring

**VLBI** capabilities

Software correlator



#### Main reflector: 1000 actuators



Sub reflector tilt control system

Receivers

Back-ends

Metrology

Site Monitoring

**VLBI** capabilities

Software correlator



Transparency at high frequencies monitored with GPS and radiometers



RFI monitoring



DiFX running on the HPC Cluster at Cagliari Astronomical Observatory









## c) Prospects of the e-VLBI infrastructures

#### In 2005, the Consortium "COSMOLAB" was created in Sardinia, including:

- Local Universities
- Local section of the National Institute for Nuclear Physics
- INAF-Cagliari Astronomical Observatory
- Regional Research Center "CRS4"
- Tiscali Company
- Nice Srl Company

COSMOLAB obtained a major research grant from the Ministry of Research (9 M€) in order to build, operate and use a <u>regional supercomputing network</u> dedicated to scientific research.

In response to this successful application, the Local Regional Government decided to supply <u>dedicated dark fibers</u> to the network.





Cluster located at Cagliari Observatory site:

64 nodes, dual processor dual core (256 CPUs)

AMD Opteron based IBM X3455,

DDR2 400 8GB RAM, 3 GbE,

APC thermal control

8 nodes, dual processor dual core (32 CPUs) AMD based IBM X3455, RAM 16GB InfiniBand

#### Cluster to be located at the radiotelescope site:

60 nodes, dual processor quad core (480 CPUs) Intel Xeon based IBM X3550, DDR2 667 16GB RAM, 3 GbE, InfiniBand

#### **Pictures of the Cagliari Observatory Computer room**





- 1. Optical fibers connecting the main Institutions already available
- 2. Dedicated use of these links granted by the Local Regional Government
- 3. Dedicated optical fiber link to the radio telescope site in progress...

...and... N x 10Gbs connection to Sicily and the Peninsula in progress !



So, in a couple of years, you VLBI people should find very attractive to visit Sardinia !

## COME TO SARDINIA !!! WE WANT YOU FOR ASTROPHYSICS !!!

