

Cleopatra

Huib van Langevelde

- JIVE was inaugurated as an ERIC on April 21
 - European Research Infrastructure Consortium
 - A Brussels' legal entity
 - Rather than a Dutch foundation
 - Legal transition in progress
 - Will require some changes for ASTERICS at some point
 - Things have started changing:
 - Joint Institute for VLBI ERIC (JIVE)
 - e-presence at jive.eu
 - logo

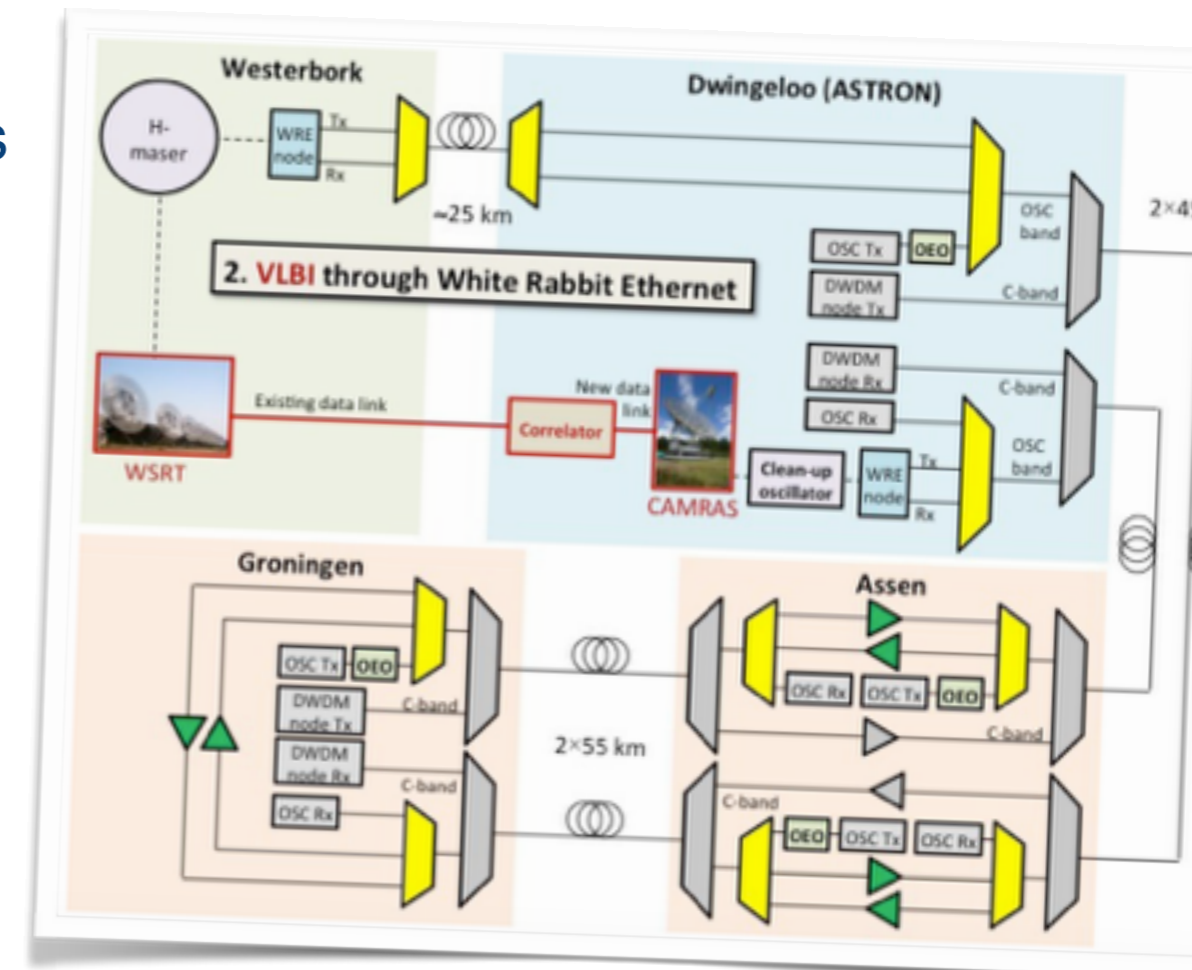


- Connecting Locations of ESFRI Observatories and Partners in Astronomy for Timing and Real-time Alerts
- Based on expertise in connectivity and some really good ideas
 - All based on fast and reliable access methods
 - Long haul & many element
 - time and frequency distribution
 - Relaying alerts for transients
 - Data streaming methods for user domain
 - AI approaches for scheduling
- Partners:
 - Total 332 man months
 - JIVE, ASTRON, CNRS, VU/VUmc, UVA, UGR, FOM, IEEC ,



5.1 Synchronisation

- White Rabbit Ethernet (WRE)
 - To be used in wide-spread, long-haul facilities
 - Like radio arrays
 - Or many detector arrays
 - CTA and neutrino telescopes
- Aims
 - Upgrade to long-haul
 - Do a Westerbork - Dwingeloo VLBI test
 - Improve phase stability
 - 10^{-13} needed for VLBI
 - New calibration tools
 - Automated for many detector arrays (CTA/KM3Net)
 - Working in harsh conditions
- VU, ASTRON, JIVE, UGR, FOM, DESY, SURFnet



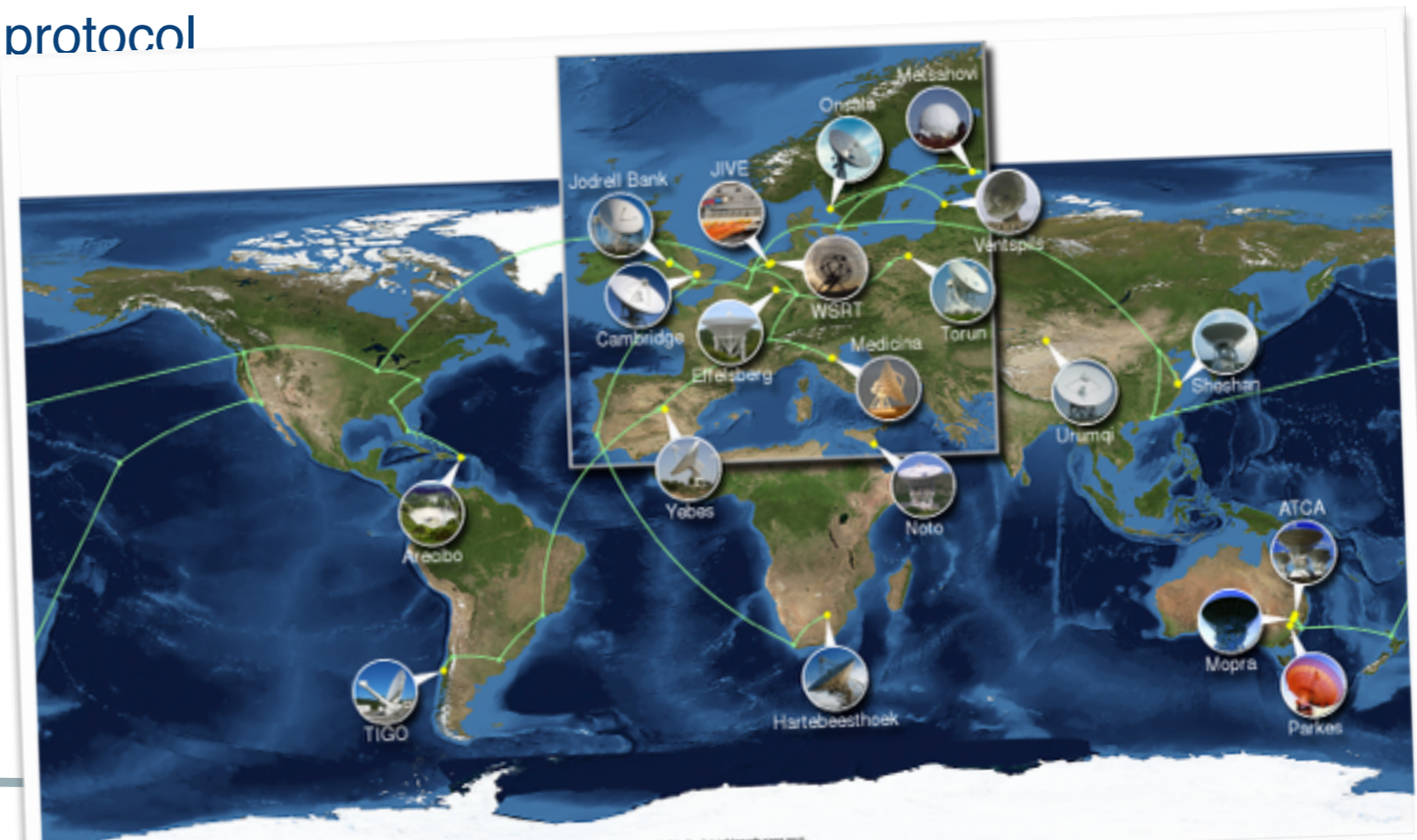
- Exchange of events
 - Can be done through VOEvents
- But policies and handshakes need to be done
 - Between various facilities
 - Filter million alerts to the one that justifies override
- Standards
 - For generation, dissemination, distribution, reaction
- Delivers:
 - Prototyping: LOFAR & EGO
 - Policies
 - Workshop
- ASTRON, CNRS-APC, JIVE, UVA

5.3 User domain data streaming

- **Small project**
 - Build client based on NEXPRoS experience
- **Inventory**
 - Intelligent data streaming decisions for user domain
 - Allow users and operators to make decisions about data volume to transport
 - Setting up the appropriate protocol

- **Delivers a tool...**

- **JIVE**



- To schedule complex, many-element arrays
 - Important for effective return
 - Planning and decision making
- AI software
 - Optimise science return
 - Initially aimed at CTA and SKA
 - Usable for multiple frequency, multiple messenger science
- IEEC, STFC, GTD

CLEOPATRA	ASTRON	CNRS	JIVE	UGR	FOM	STFC	SURFnet	IEEC	DESY	VU	UVA	TOTAL
Man months	36	24	72	36	30	12	8	24	18	36	24	320
No of trips	12	2	24	6	4	2	2	2	2	6	2	64
Travel cost	5760	960	11520	2880	1920	960	960	960	960	2880	960	30720
Equipment			80000		80000							160000
Audit certificate												
3rd parties								94950				94950
Requested	280950	121200	624400	191100	321150	114873	82400	194900	136200	269850	158615	2495638

GTD is a 3rd party to IEEC

Target CLEOPATRA division of work

Task	Legal entity	months		trips	
Task 1a	JIVE	24,00		8	
<i>Long Haul Clocks</i>	VUAMS	12,00		2	
	ASTRON	12,00		2	
	UGR	36,00		6	
	SURFNet	8,00		2	
	Hardware		100k€		29%
Task 1b	VUAMS	24,00		4	
<i>Many Clock distrib</i>	FOM, NIKHEF	30,00		4	
	DESY	18,00		2	
	Hardware		100k€		21%
Task 2	ASTRON	24,00		10	
<i>Multi messenger alert</i>	JIVE	24,00		2	
	UVA	24,00		2	
	CNRS, APC	24,00		2	29%
Task 3	JIVE	24,00		4	
<i>Data distrib methods</i>	Other			4	7%
Task 4	IEEC	24,00		2	
<i>Scheduling distrib arrays</i>	GTD	12,00		2	
	STFC	12,00		2	
	Other	0,00		6	14%
	check	332,00		66	

- We have to start communications
 - kick off meeting



End

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