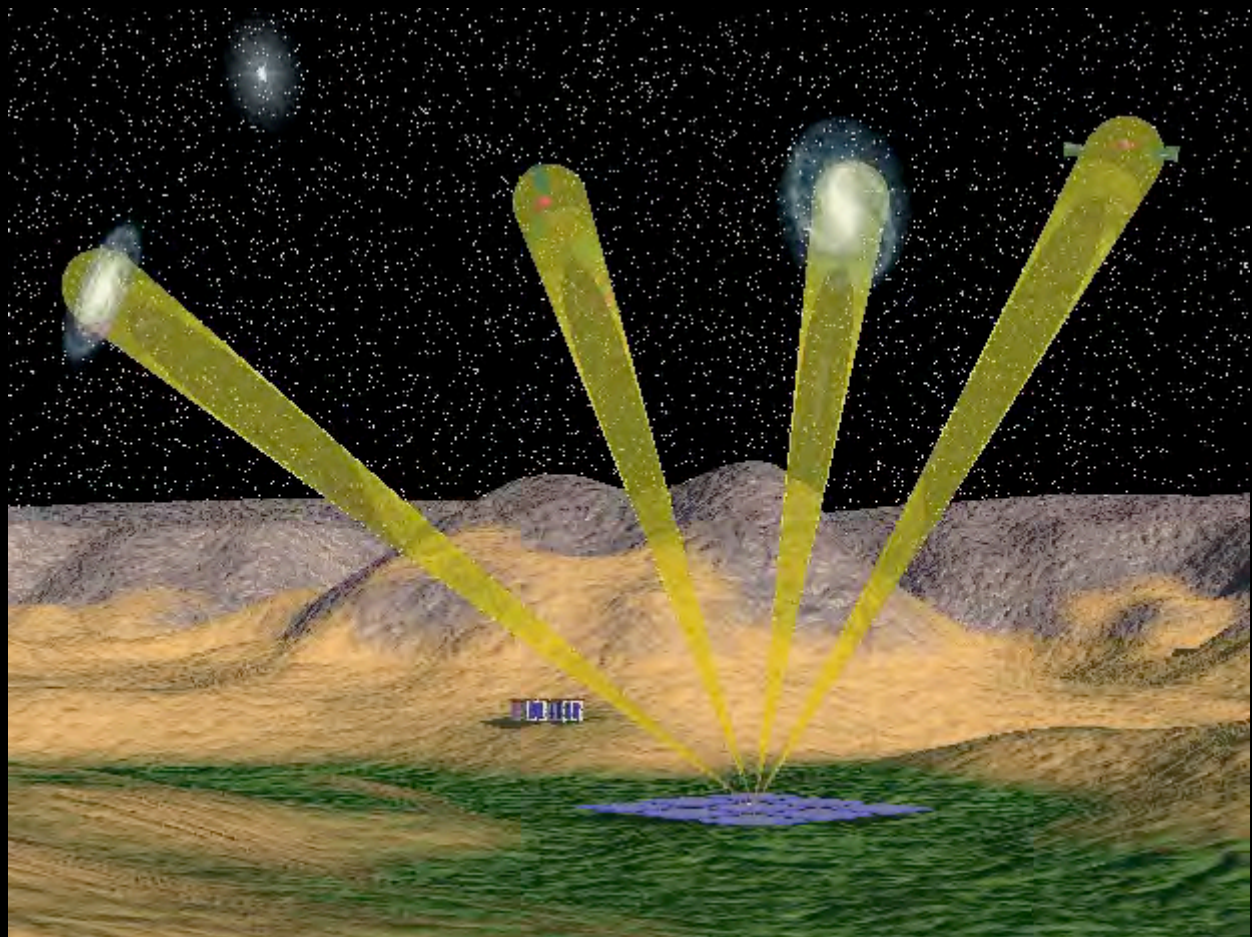




French Participation in SKA

Steve Torchinsky, SKADS Project Scientist
Wim van Driel, Coordinator for SKA in France

GEPI/USN, Observatoire de Paris-Meudon (OPAR)



LOFAR Workshop
Meudon, 2006 March 29

Participation on two levels



International

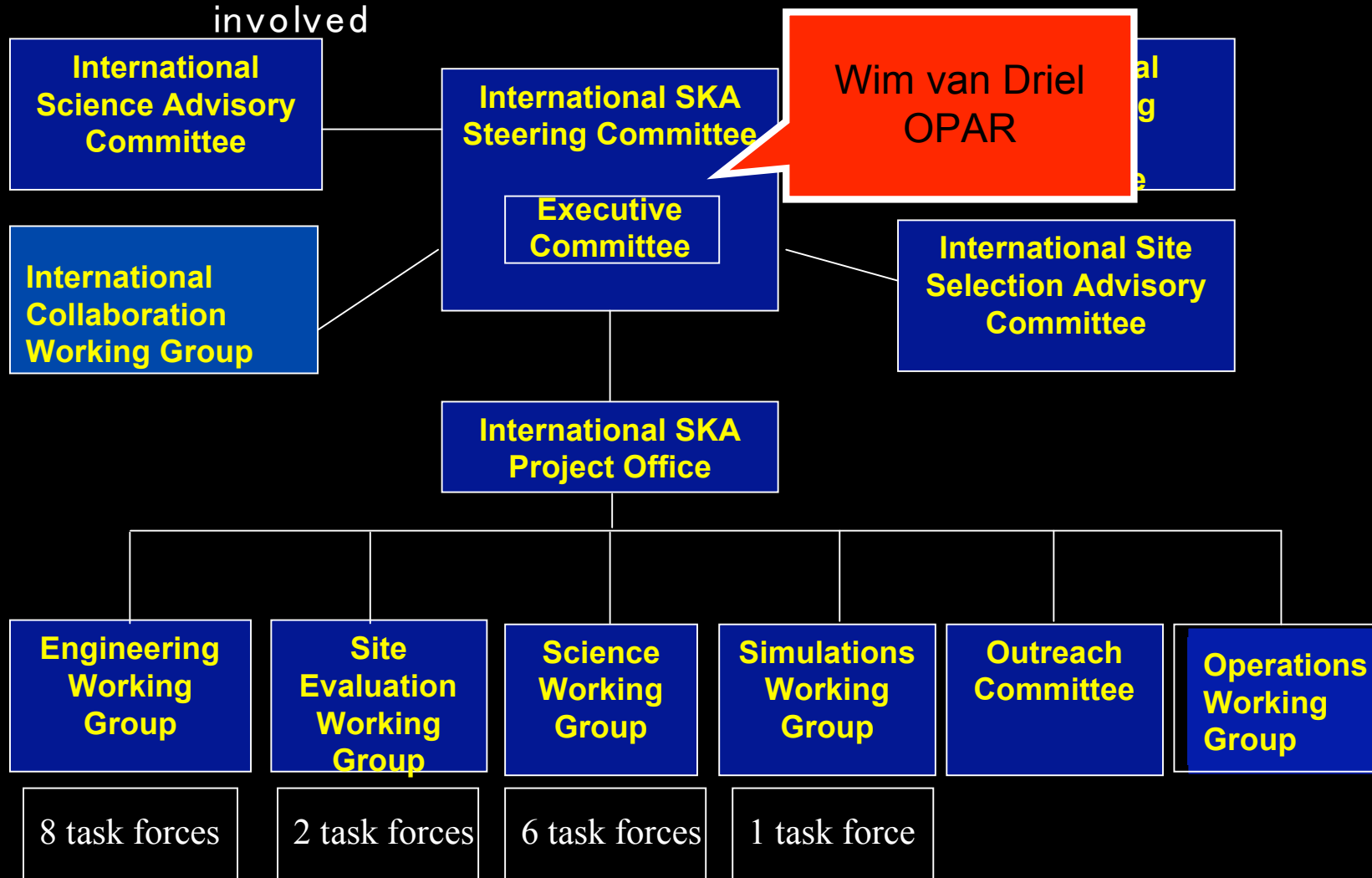


European



SKA governance

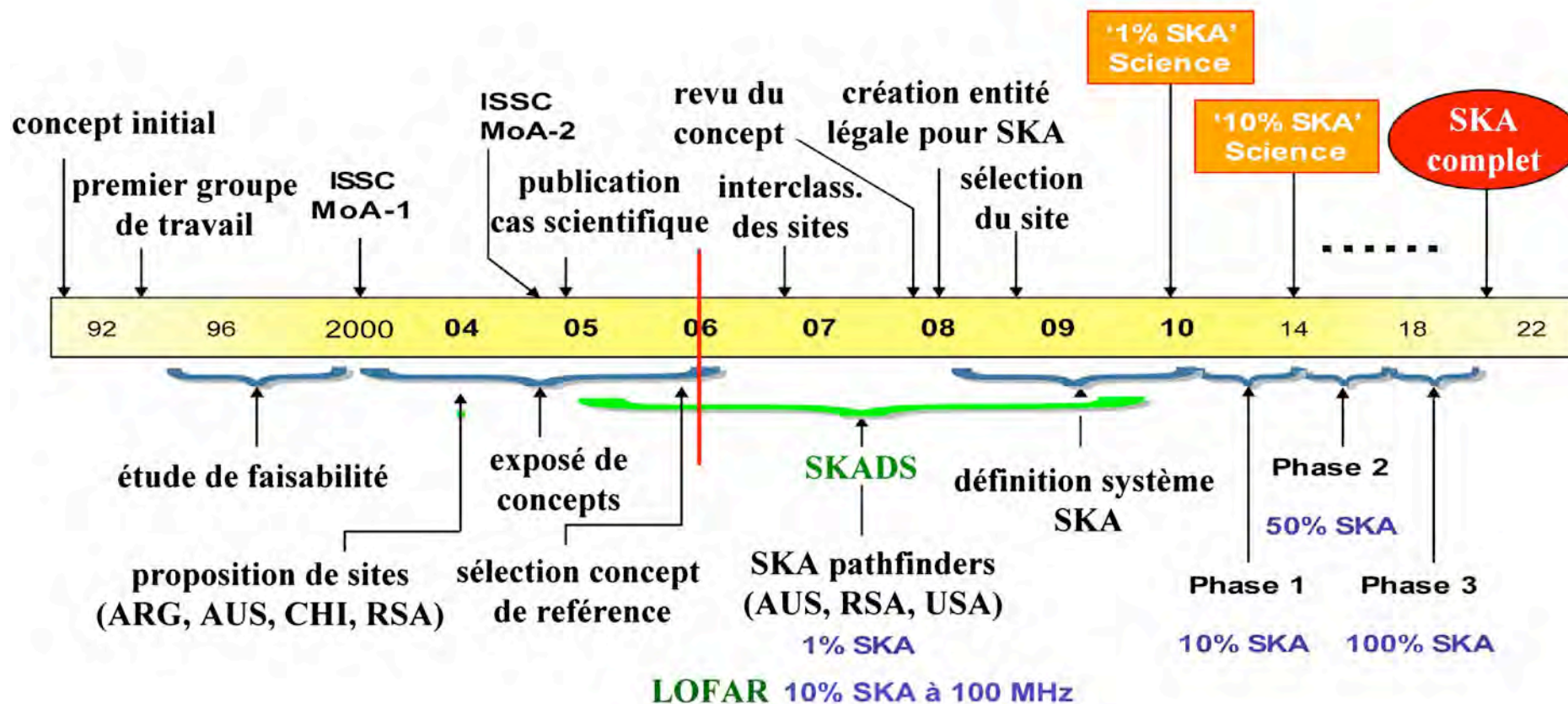
SKA was “born global”; >50 institutes in 17 countries actively involved





SKA Schedule

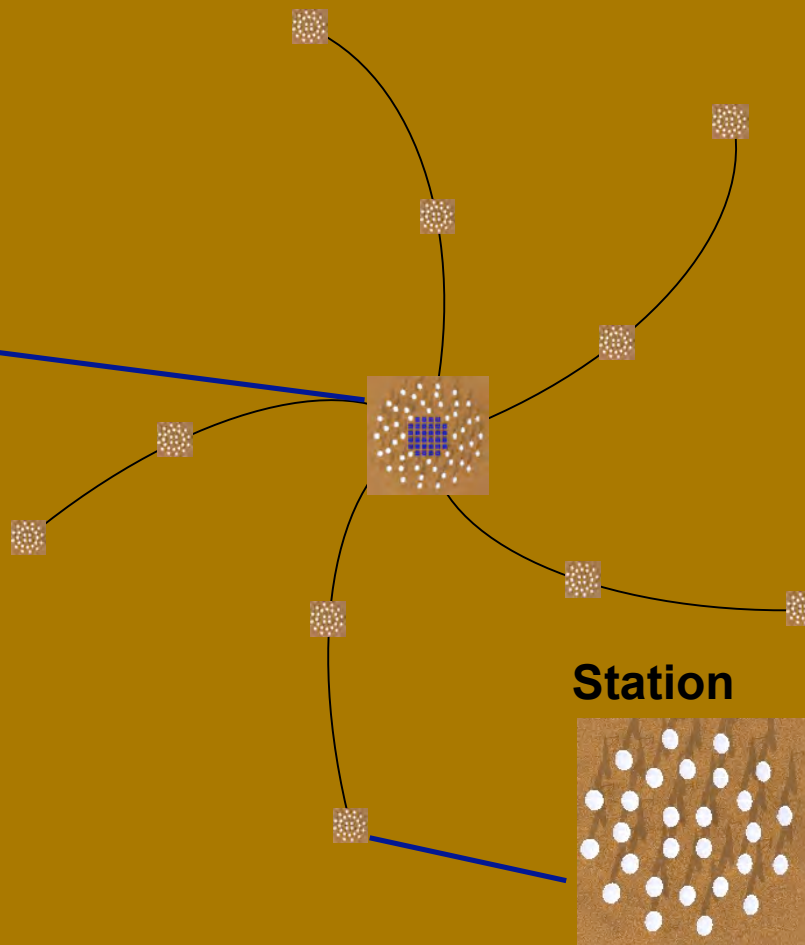
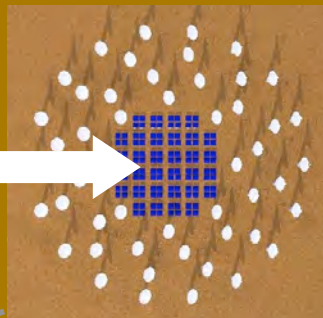
Global Project: 50+ Institutes in 18 countries



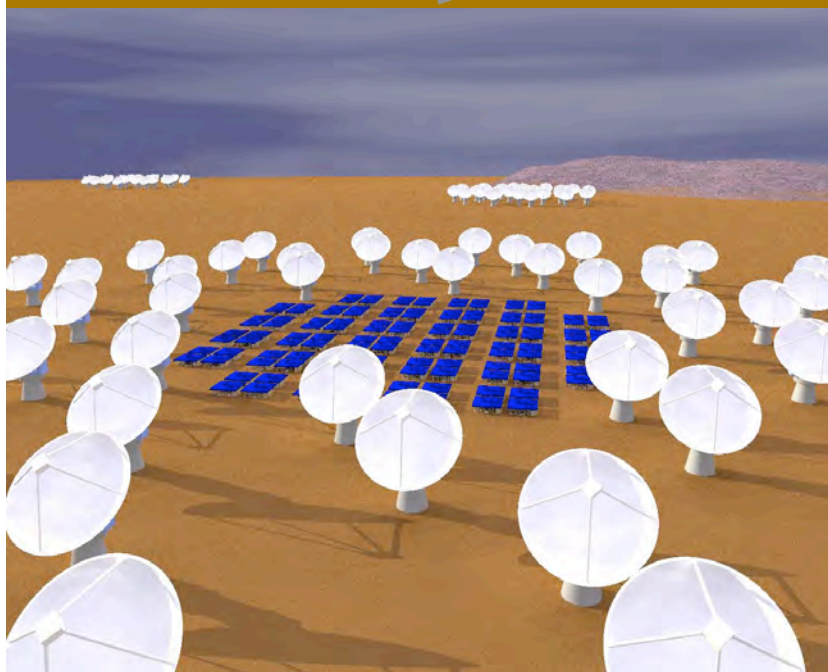
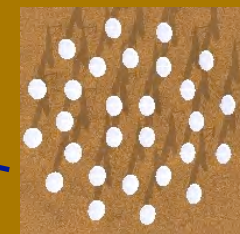


Reference Design

Inner core



Station



Wide-angle radio camera +
radio "fish-eye lens"



European Square Kilometre Array Design Studies



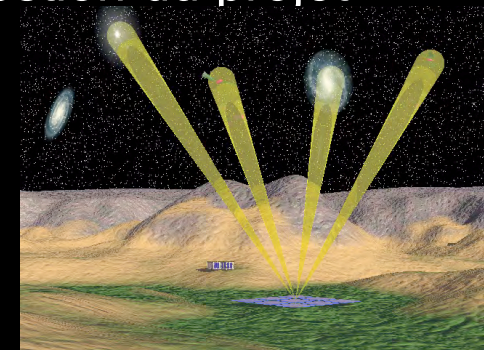


SKA Design Study (Europe)

- EC FP6: 38 MEUR totale, 10.4 MEUR EC (dont 1.8 MEUR pour FR)
- Objectifs principaux:
 - Construction d'EMBRACE, le démonstrateur du concept européen de réseau phasé pour SKA (installé à Nançay en 2007)
 - R&D vers l'utilisation de notre concept dans SKA
- Partenaires UE: 32 instituts dans 13 countries (principaux: NL, UK, F, I)

France: Obs. de Paris, Univ. d'Orléans, Univ. de Limoges, OMMIC(Philips)

Modélisation scientifique (cosmologie); développement technique (circuits intégrés, élimination d'interférences radio), gestion du projet





Participants

ASTRON, NL
University of Manchester, UK
Joint Institute for VLBI in Europe, NL
Observatoire de Paris, FR
Istituto di Radioastronomia, IT
Fundacion General de la Univ. De Alcala, ES
Max Plank Institute fur Radioastronomie, DE
University Of Oxford, UK
CSIRO, AU
Puschino RAO, RU
National Research Council, CA
National Research Foundation, SA
Torun Centre for Astronomy, PL
Chalmers University, SE

University of Cambridge, UK
RUG Kapteyn Astronomical Institute, NL
University Leiden, NL
Cardiff University, UK
University of Glasgow, UK
Swinburne University of Technology, AU
Univ. of Adelaide, AU
University of Melbourne, AU
University of Sydney, AU
University d'Orleans, FR
Centre National de la Recherche Scientifique, FR
University of KwaZulu-Natal, ZA
University of Leeds, UK
Universidad de Valencia, IT
OMMIC, FR

DS1 - Coordination and Management ASTRON	Coordinator	ASTRON	SKADS Coordination and Management
DS2 - Science & Technical Specification JIVE	DS2 - T1 DS2 - T2	Oxford JIVE	Science Simulations Astronomical Data Simulations
DS3 - The Network & its Output Data Cambridge	DS3 - T1 DS3 - T2 DS3 - T3 DS3 - T4 DS3 - T5 DS3 - T6	U Man ASTRON Cambridge ASTRON Cambridge ASTRON	Network Infrastructure & Data Transmission Data Handling, Control and Distributed computing Architecture and the Network Simulator A Study of Siting & Related Issues SKA for the User Scaleable Design and Implementation
DS4 - Technical Foundations & Enabling Technologies U Man	DS4 - T1 DS4 - T2 DS4 - T3 DS4 - T4 DS4 - T5 DS4 - T6	U Man INAF-IRA OPAR ASTRON Oxford U Man	Front End-Technologies Signal Control & digitisation RFI Mitigation Strategies Wideband Integrated Antennas Beam-forming at patch level The 2-PAD Demonstrator
DS5 - The EMBRACE Demonstrator ASTRON	DS5 - T1 DS5 - T2 DS5 - T3	ASTRON ASTRON OPAR	Design of EMBRACE Development of EMBRACE as a System EMBRACE Assessment of Performance
DS6 - The Cylinder Demonstrator INAF-IRA	DS6 -T1 DS6 -T2 DS6 -T3 DS6 -T4	INAF-IRA INAF-IRA INAF-IRA ASTRON	Design of Sub-Systems Development and Demonstration Assessment of Performance Phased Arrays on Concentrators
DS7 - Assessment and Critical Reviews OPAR	DS7 - T1	OPAR	Continuous Assessment and Critical Reviews
DS8 Overall Systems Design and Preliminary SKA Plan U Man	DS8 - T1	U Man	Overall System Design and Preliminary SKA Plan



Participants in France

DS1	Coordination and Management	OPAR	S. Torchinsky
DS2-T1	SKA Science Simulations	OPAR	F. Combes (plus ...)
DS3-T4	Siting and related Issues	OPAR	W. van Driel
DS4-T1	Front-end Technologies	OPAR UORL OMMIC	J. Pezzani R. Weber D. Smith
DS4-T3	RFI Mitigation Strategies	OPAR UORL	P. Colom R. Weber
DS4-T4	Wideband Integrated Antennas	OPAR OMMIC	J. Pezzani D. Smith
DS4-T5	Beamforming at Patch and Tile Level	OPAR CNRS OMMIC	J. Pezzani B. Jarry D. Smith



Participants in France

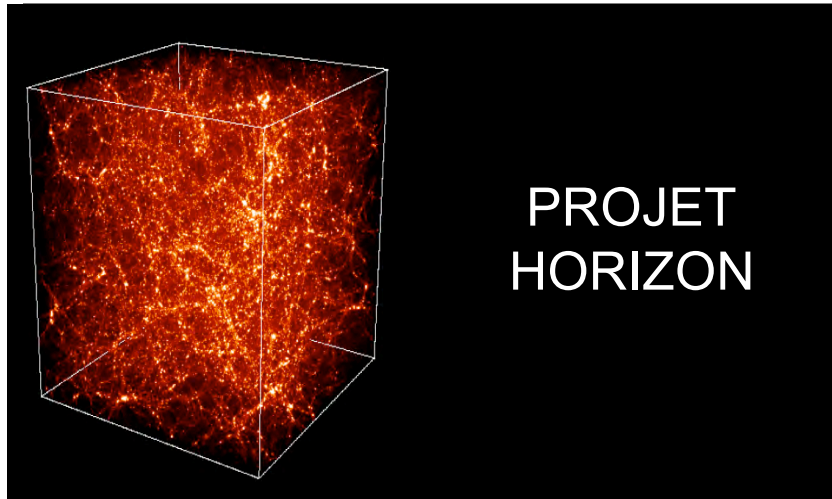
DS5-T1	Design of EMBRACE subsystems	OPAR OMMIC	P. Picard D. Smith
DS5-T2	Dev. and Prod. of EMBRACE as a system	OPAR OMMIC	I. Thomas D. Smith
DS5-T3	Assessment of EMBRACE Performance	OPAR	S. Torchinsky J. Pezzani
DS7	Cont. assessment and Critical Design Rev.	OPAR	W. van Driel



Cosmo-SKA

Proposal submitted to ANR
by Françoise Combes *et al.*

DS2-T1 **SKA Science Simulations**



OPAR/LERMA

F. Combes

B. Semelin

Y. Revaz

A-L. Melchior

OPAR/GEPI

W. van Driel

S. Torchinsky

J-M. Martin

IAP

Y. Mellier

J-P. Uzan

J. Martin

F. Bernardeau

S. Charlot

H. McCracken

Paris-VII

P. Binetruy

J. Bartlett

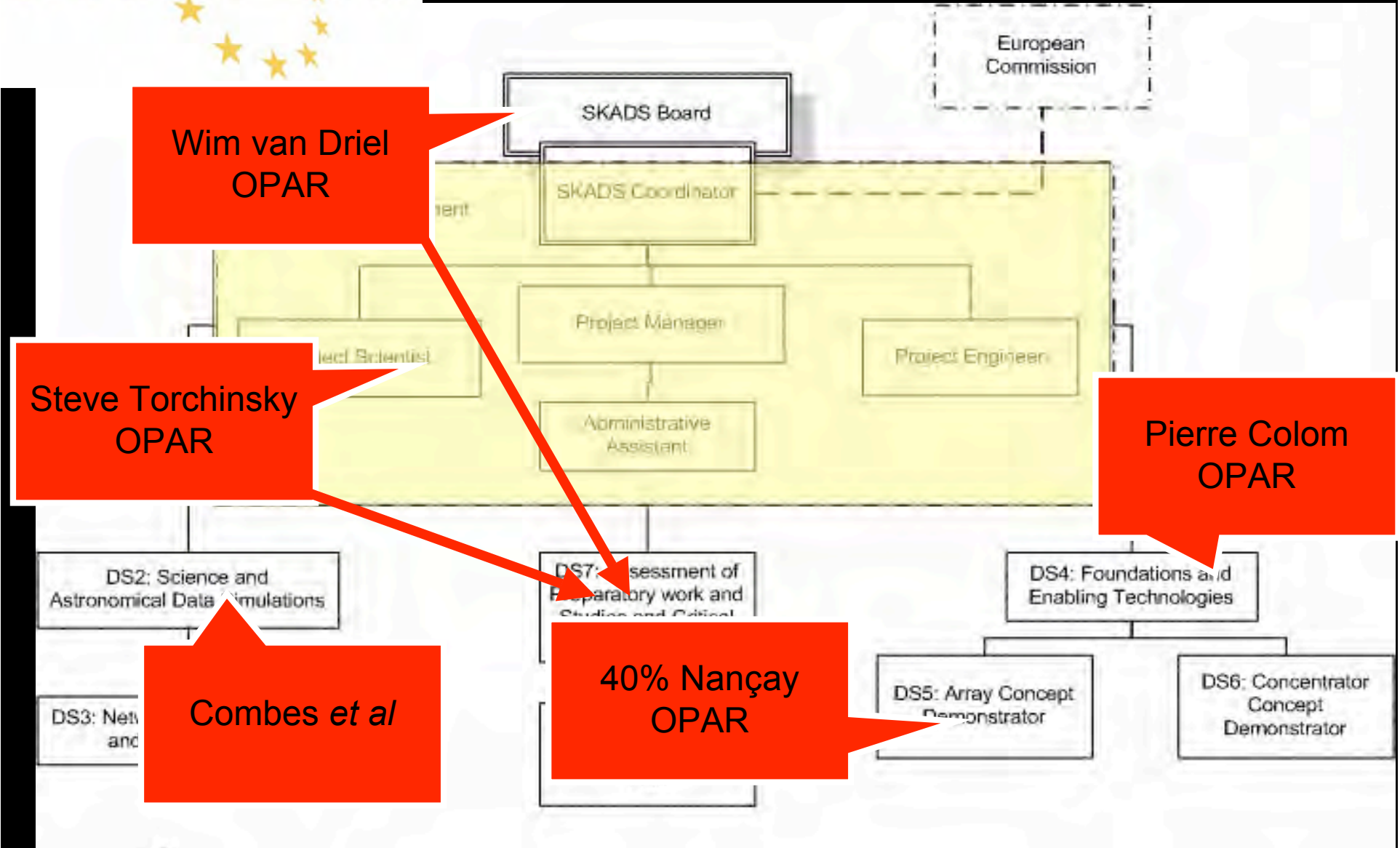
C. Deffayet

Y. Giraud-Heraud

Epoch of Reionisation, Dark Energy, Astro particles, galaxies, weak gravitational lensing, subtraction of foreground sources



Organisation





Organisation in France

coordinator SKADS-France: W. van Driel

DS1 Project Scientist:
S. Torchinsky

DS-5-F: Co-Is S. Torchinsky & P. Picard

DS4-T3: P. Colom

DS5-T1-F: P. Picard

DS5-T2-F: I. Thomas

DS5-T3-F: S. Torchinsky
J. Pezzani

DS7: W. van Driel

Responsibility in France
Responsibility in SKADS

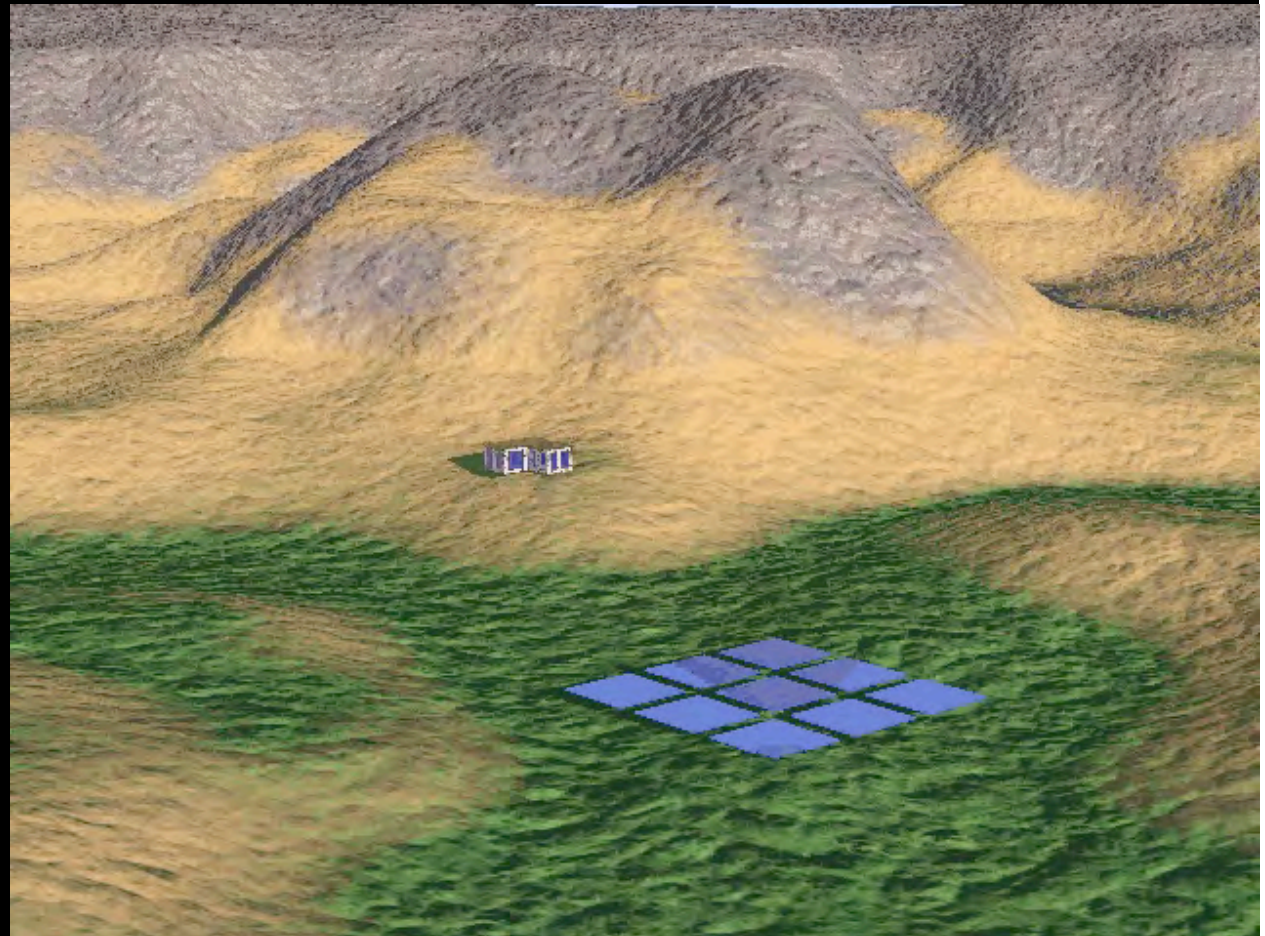
DS5-T3: S. Torchinsky



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GEPI/USN, Observatoire de Paris-Meudon (OPAR)



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