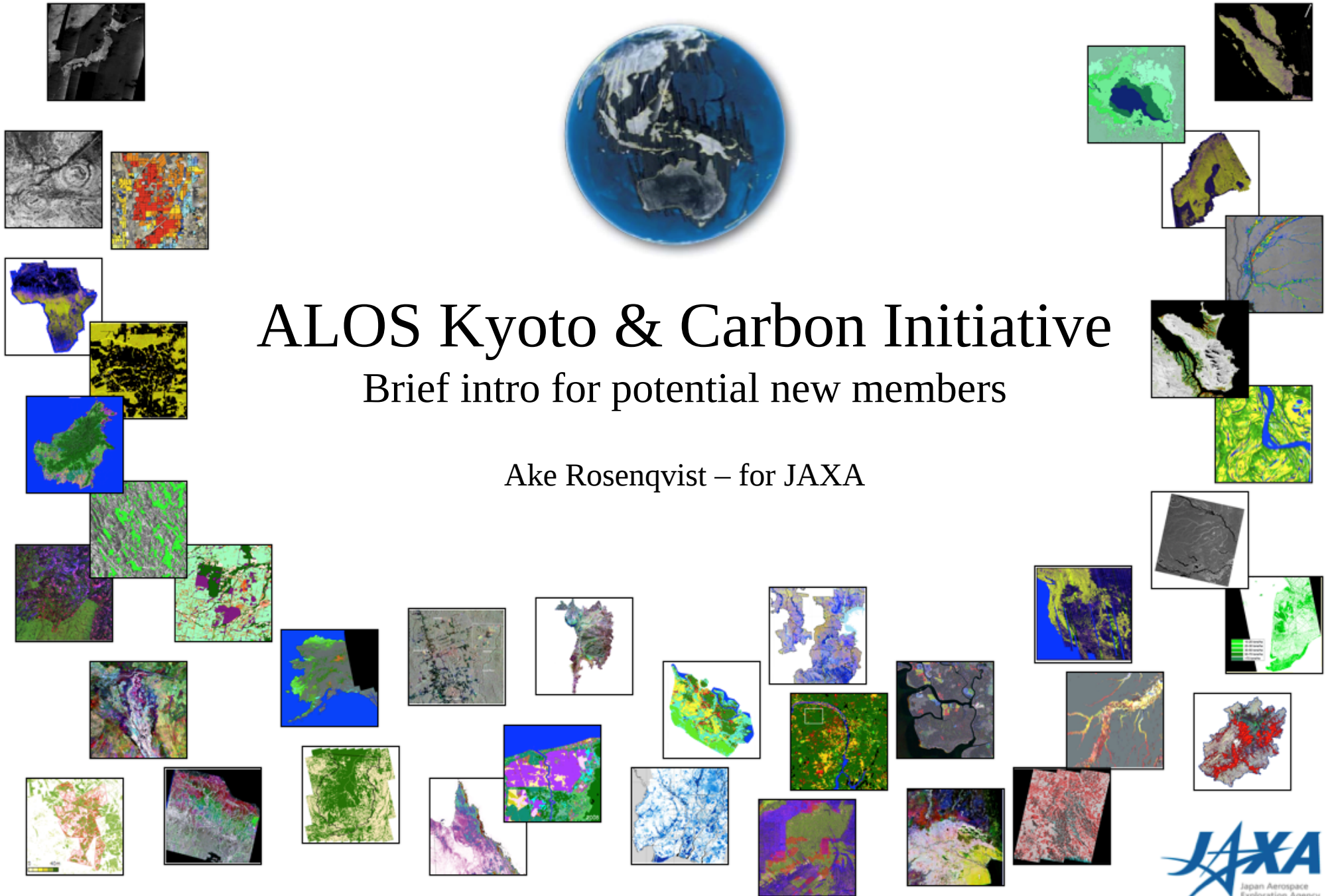




ALOS Kyoto & Carbon Initiative

Brief intro for potential new members

Ake Rosenqvist – for JAXA



Outline

1. Heritage and objectives
2. Project organization
3. Data- and information requirements
4. (Science Team results)
5. Misc project information

Heritage and objectives

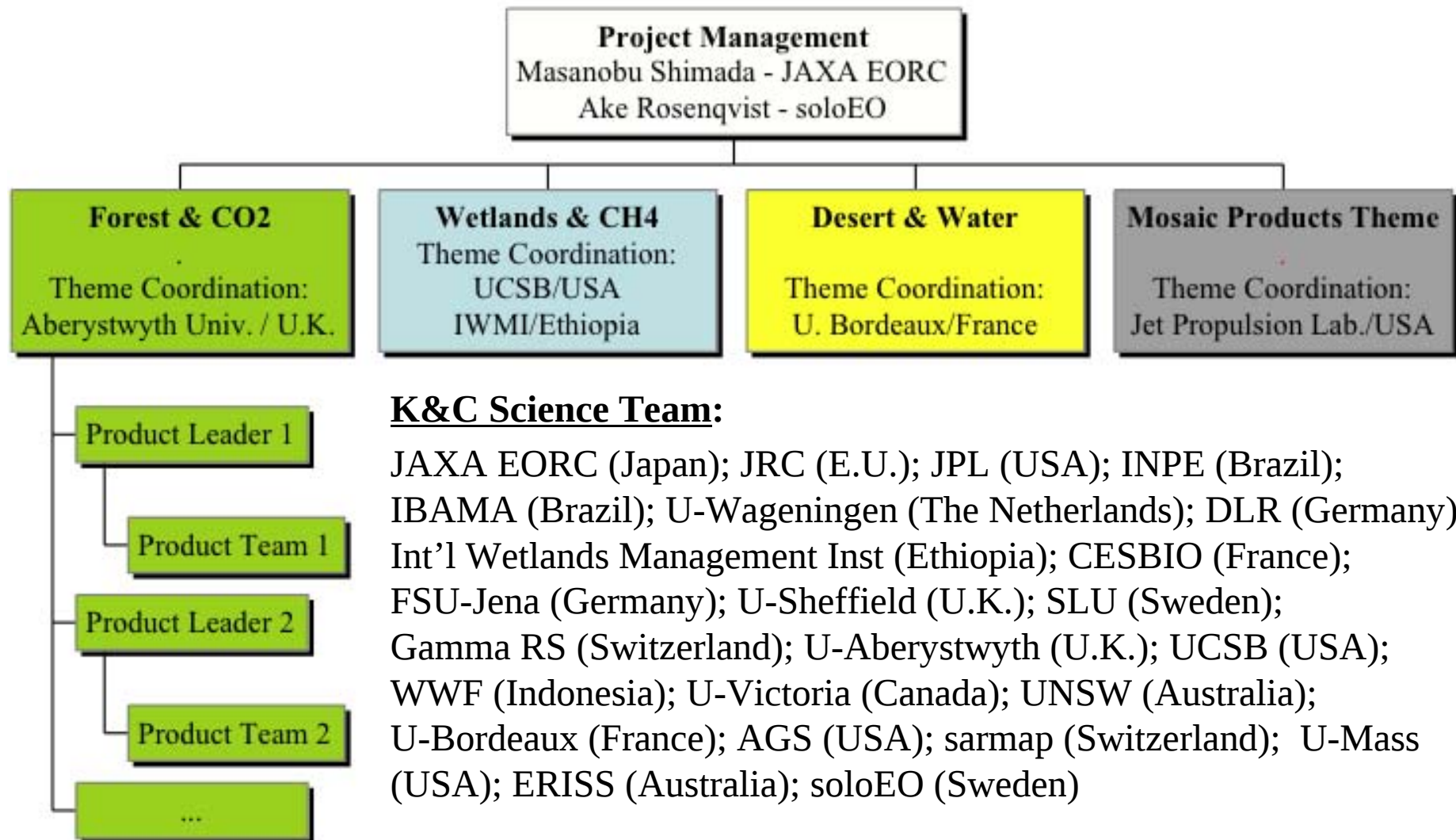
The ALOS Kyoto & Carbon Initiative is an international collaborative project forming the continuation and extension of the JERS-1 SAR GRFM/GBFM project into the era of ALOS and ALOS-2.

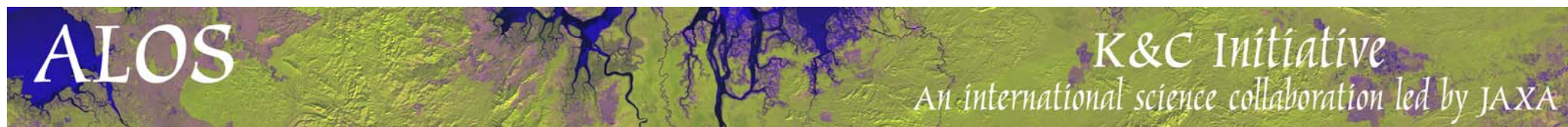
Aims to support information needs posed by the “3 C’s”:

- The terrestrial **C**arbon cycle science community (CO₂ & CH₄ sources and sinks);
- Multinational Environmental **C**onventions:
 - UNFCCC Kyoto Protocol and UN-REDD+ (Forest and Land Cover Change);
 - Ramsar Convention (wetland characteristics and disturbances);
- Environmental **C**onservation

...and recently: REDD+ and the GEO Forest Carbon Tracking Task

K&C Project organization





Science Team - 22 science groups from 14 countries

Name	Affiliation	Representing country
Silvana Amaral	National Institute for Space Research (INPE)	Brazil
Bruce Chapman	Jet Propulsion Laboratory/California Inst. of Technology (JPL)	USA
Maycira Costa	University of Victoria	Canada
Frank De Grandi	European Commission, Joint Research Centre (JRC)	EU
Humberto Navarro de Mesquita Jr.	Institute for Environment and Renewable Natural Resources (IBAMA)	Brazil
Johan Fransson	University of Agricultural Sciences (SLU)	Sweden
Laura Hess	University of California Santa Barbara	USA
Dirk Hoekman	Wageningen University	The Netherlands
Francesco Holecz	sarmap	Switzerland
Josef Kelldorfer	Woods Hole Research Center (WHRC)	USA
Thuy Le Toan	Centre d'Etudes Spatiales de la Biosphère (CESBIO)	France
John Lowry	Department of Environment, Water, Heritage and the Arts	Australia
Richard Lucas	Aberystwyth University	Wales, U.K.
Kyle McDonald	Jet Propulsion Laboratory/California Inst. of Technology (JPL)	USA
Anthony Milne	Horizon Geoscience	Australia
Philippe Paillou	University of Bordeaux	France
Kostas Papathanassiou	German Aerospace Center (DLR)	Germany
Shaun Quegan	Sheffield University	U.K.
Lisa-Maria Rebelo	International Water Management Institute (IWMI)	Ethiopia
Ake Rosenqvist	Solo Earth Observation (soloEO)	Sweden
William Salas	Applied Geoscience (AGS)	USA
Maurizio Santoro	Gamma Remote Sensing	Switzerland
Christiane Schmullius	Friedrich-Schiller University Jena	Germany
Masanobu Shimada	Japan Aerospace Exploration Agency (JAXA)	Japan
Paul Siqueira	University of Massachusetts	USA
Kevin Telmer	University of Victoria	Canada
Christian Thiel	Friedrich-Schiller University Jena	Germany
Yumiko Uryu	World Wide Fund for Nature (WWF)	Indonesia
Dalton Valeriano	National Institute for Space Research (INPE)	Brazil
Yoshiki Yamagata	National Institute for Environmental Studies (NIES)	Japan

Project phases

Phase 0 – K&C Science Advisory Panel – 2001-2005

- Scientific advise to JAXA during ALOS mission development
- Development of the ALOS systematic acquisition strategy (“BOS”)*
- Pre-launch research: Development of algorithms and methods using archived JERS-1 SAR;

Phase 1 & 2 – Regional “prototype” demonstration – 2006-2010

- Application demonstrations over “large” geographical regions - regional/semi-continental scale

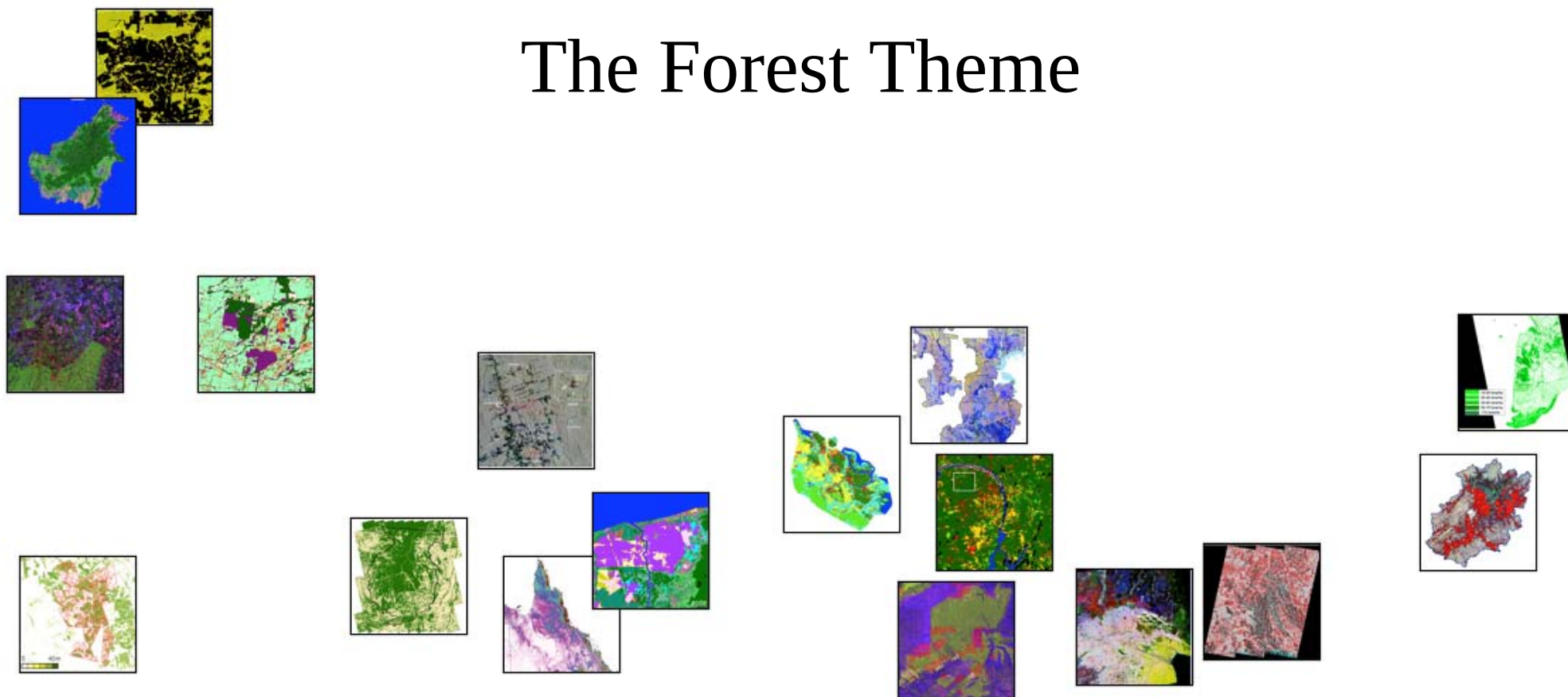
Phase 3 – Recently approved by JAXA (2011 + 4 years)

New focus areas:

- JAXA EORC global forest/non-forest map (validation and improvement)
- Development of methodology guidelines for forest/wetlands mapping by SAR
- K&C Mangrove Watch – global mangrove change mapping
- Ramsar Wetlands Convention (JAXA-Ramsar Sec MoU signed Oct.2010)

* *PALSAR “Basic Observation Scenario” implemented by JAXA from launch to assure continental-scale, repetitive & spatio-temporally consistent PALSAR data acquisitions over all land areas on the globe.*

The Forest Theme



Forest Theme Science Team members

Theme Coordination:

- Richard Lucas - U-Wales Aberystwyth, U.K.

Science Team:

- Thuy Le Toan - CESBIO, France
- Christiane Schmullius (Leif Eriksson) - U-Jena, Germany
- Shaun Quegan - U-Sheffield, U.K.
- Yumiko Uryu, WWF, Indonesia
- Dalton Valeriano, Silvana Amaral- INPE, Brazil
- Humberto Mesquita, IBAMA, Brazil
- Johan Fransson - SLU, Sweden
- Richard Lucas - U-Wales Aberystwyth, U.K.
- Dirk Hoekman – U. Wageningen, The Netherlands
- Kostas Papathanassiou - DLR, Germany
- Paul Siqueira - U. Massachusetts, USA

Forest Theme Objectives

Aims to support to the UNFCCC Kyoto Protocol, REDD+
and Terrestrial Carbon Cycle Science

Data

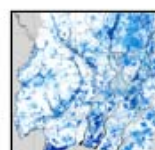
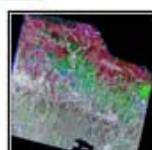
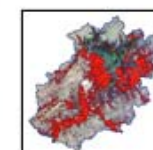
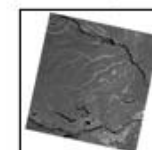
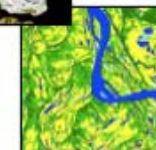
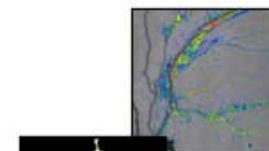
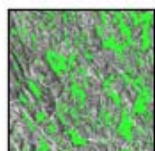
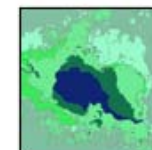
Development of systematic observation systems and data archives (Kyoto Protocol Art. 5, 10d) (--> ALOS observation strategy)

Derived information

Detection and spatial quantification of annual changes in forest- and land cover (Art. 3.3, 3.4, 4, 12)

Incremental changes in [regenerating] above-ground biomass (Art. 3.3, 3.4, 4, 12);

The Wetlands Theme



Wetlands Theme Science Team members

Theme Coordination:

- Laura Hess - UCSB, USA
- Maria Lisa Rebelo, IWMI, Ethiopia

Science Team:

- Laura Hess - UCSB, USA
- Maria Lisa Rebelo, IWMI, Ethiopia
- Richard Lucas - U. Wales Aberystwyth, U.K.
- Tony Milne - Horizon, Australia
- Maycira Costa - U-Victoria, Canada
- Kevin Telmer - U-Victoria, Canada
- Dirk Hoekman – U. Wageningen, The Netherlands
- Kyle McDonald - JPL, USA
- Bill Salas - AGS, USA
- Ake Rosenqvist - soloEO, Sweden
- John Lowry - ERISS, Australia

The Wetlands Theme Objectives

Aims to support the Ramsar Convention on Wetlands
and Terrestrial Carbon Cycle science

Ramsar information requirements (conservation focus)

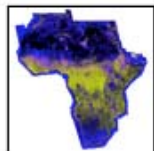
- (1) Spatial and temporal characteristics of flooding patterns in Ramsar designated (and other) wetland areas
 - Spatial extent;
 - Temporal cycle (seasonal/annual/decadal...);
- (2) Identification of natural- and human-induced disturbances in wetlands;
- (3) Support to the Ramsar global wetlands inventory.

Relevance to TCO (Wetlands as sources of CH₄)

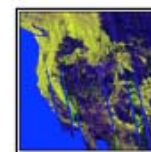
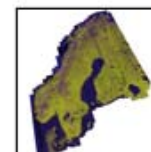
- (4) Monitoring of anthropogenic and natural sources of CH₄

ALOS

K&C Initiative
An international science collaboration led by JAXA



The Desert and Mosaic Themes



Desert and Mosaic Theme Science Team members

Desert Theme Coordination:

- Philippe Paillou –
U. Bordeaux/OASU, France

Science Team:

- Philippe Paillou –
U. Bordeaux/OASU, France
- Francesco Holecz –
sarmap, Switzerland

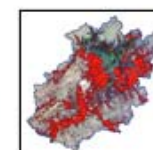
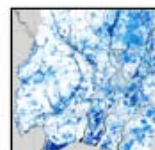
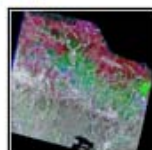
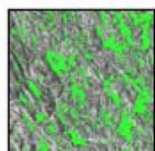
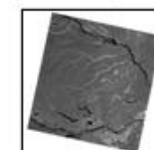
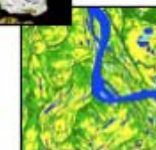
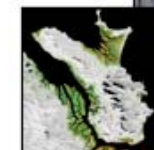
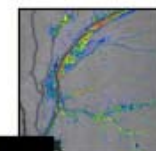
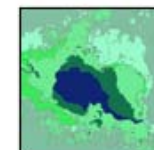
Mosaic Theme Coordination:

- Bruce Chapman - JPL, USA

Science Team:

- Masanobu Shimada - JAXA EORC, Japan
- Bruce Chapman - JPL, USA
- Philippe Paillou - OAB, France
- Frank De Grandi - JRC, E.U.
- Maurizio Santoro, Gamma RS, Switzerland
- Francesco Holecz, sarmap, Switzerland

Publications and public access



Reports and publications

K&C Science Plan, v.3.1 (March 2008, 105 pp)

*K&C Science Team Reports **Phase 1** (Jan 2010, 230 pp)*

*K&C Science Team Reports **Phase 2** (in making - Spring 2011)*

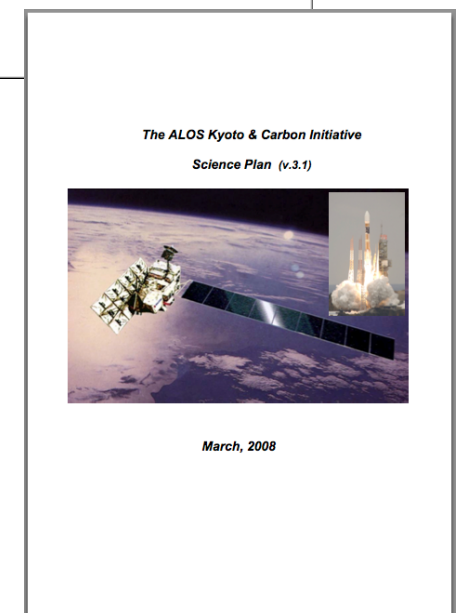
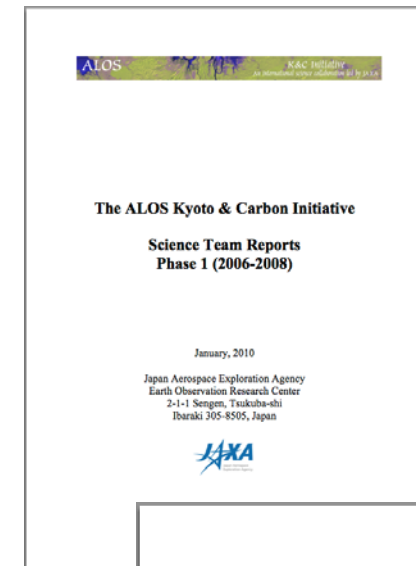
*IEEE Journal on Special Topics in Earth Observation
and remote Sensing (J-STARS)*

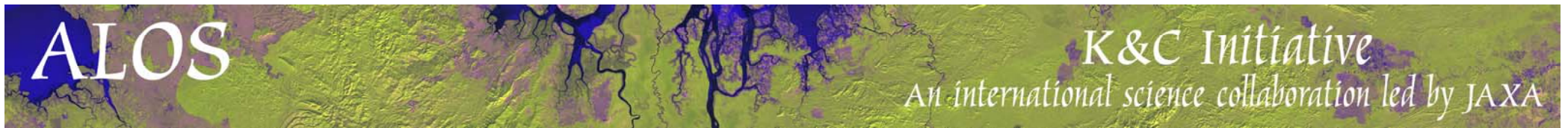
Vol. 3 No.4, Dec. 2010

- Special Issue on K&C: Phase 1 results
- 10 papers from Forestry, Wetlands, Desert and Mosaic Themes

RSE Special Issue on K&C (– 2012)

- Phase 2 results
- 25+ papers





Illustrated **K&C Booklet** (85 pp) published Sept. 2010

35+ project descriptions in English and Japanese



Digital copy (PDF) available for download at:

http://www.eorc.jaxa.jp/ALOS/en/kyoto/ref/KC-Booklet_2010_comp.pdf

For printed copies, email to aproject@jaxa.jp

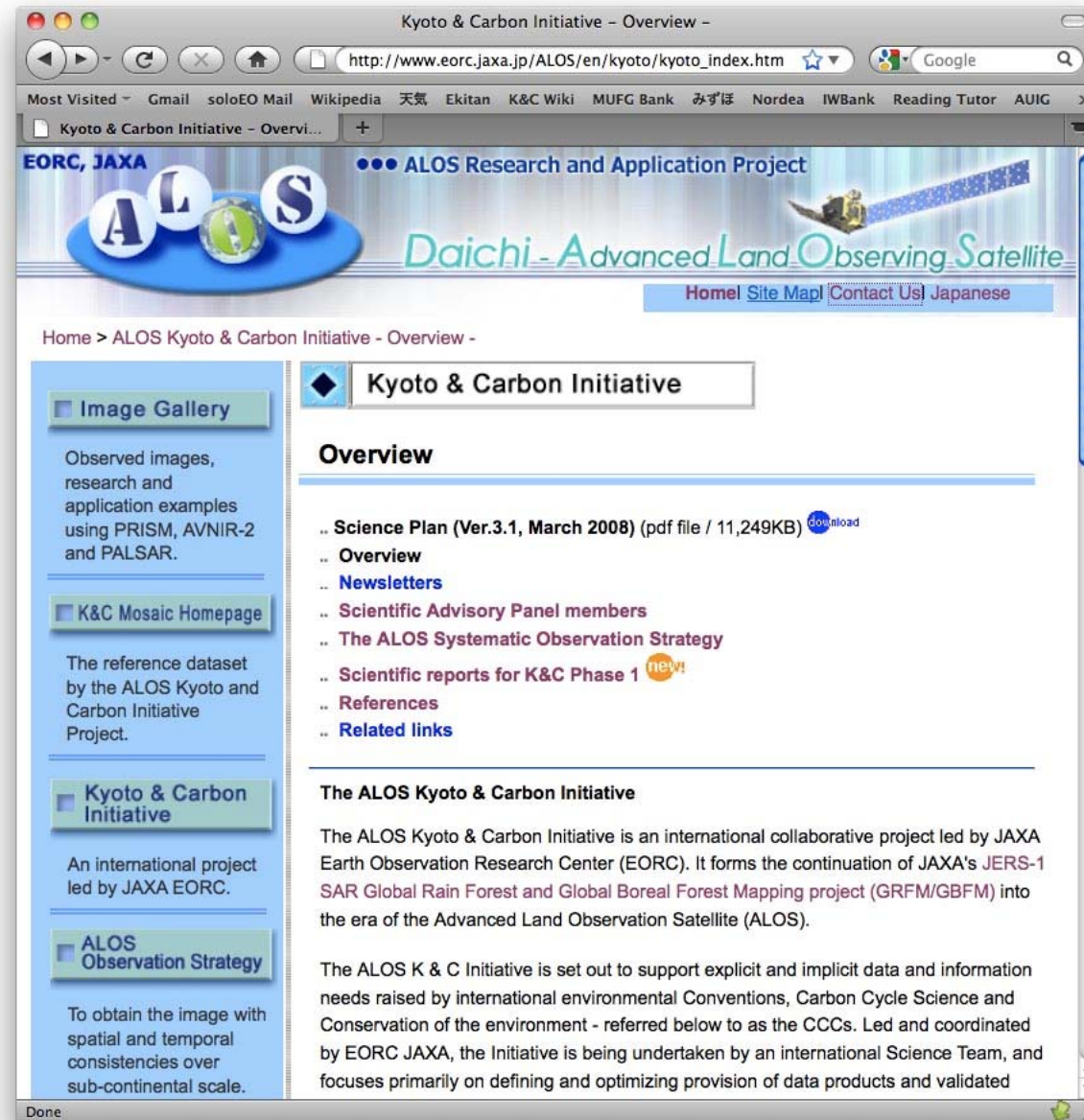
ALOS

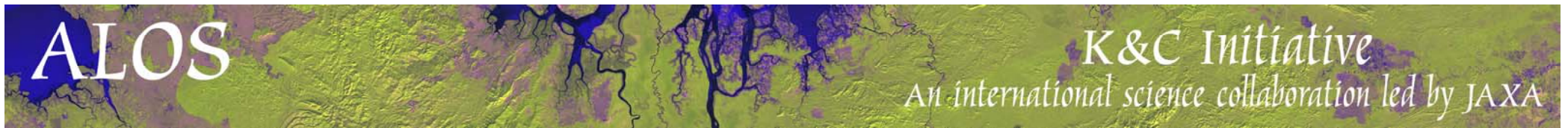
K&C Initiative
An international science collaboration led by JAXA

JAXA EORC www homepage:

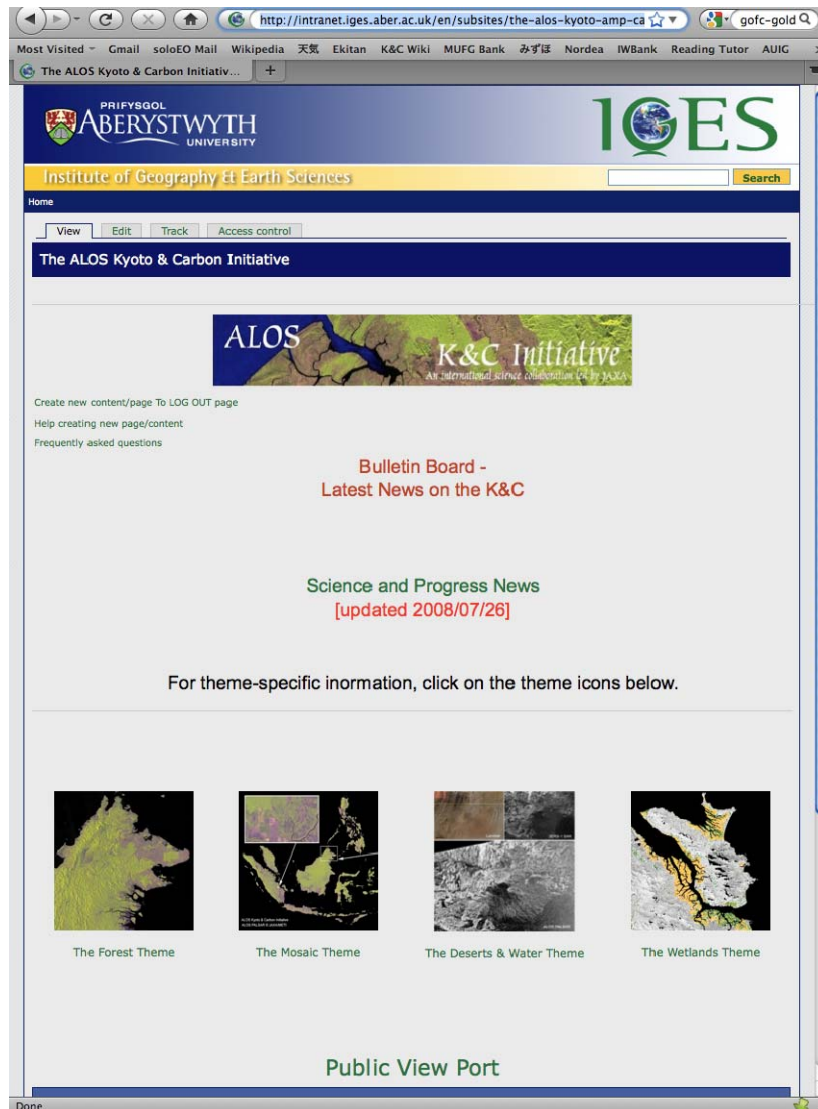
- K&C project information
- K&C Mosaic Homepage
- ALOS Obs. Strategy (BOS)
- いろいろ

http://www.eorc.jaxa.jp/ALOS/en/kyoto/kyoto_index.htm





K&C Wiki



Internal project site for K&C
Science Team

Site hosted by Aberystwyth Univ.

Wiki-based – registered users can
make on-line changes

User ID & Password:
"ALOS-KC"

<http://intranet.iges.aber.ac.uk/en/subsites/the-alos-kyoto-amp-carbon-initiative>



Thank you. ありがとう。
Obrigado. Tack. Merci.
Danke. Dank u. Gracie. Gracias.
Diolch. Terima kasih. Spasibo.

