



Users Requirements



- Cork Consultation Meeting, 12-20 March 2009
- Champion Users:
 - Provide a signed statement of their detailed user **requirements** (URDs)
 - Sign a letter of commitment to the project
 - Advise ESA during the execution of the project
 - Evaluate the project outcomes at the mid-term and final project reviews.

Users overview

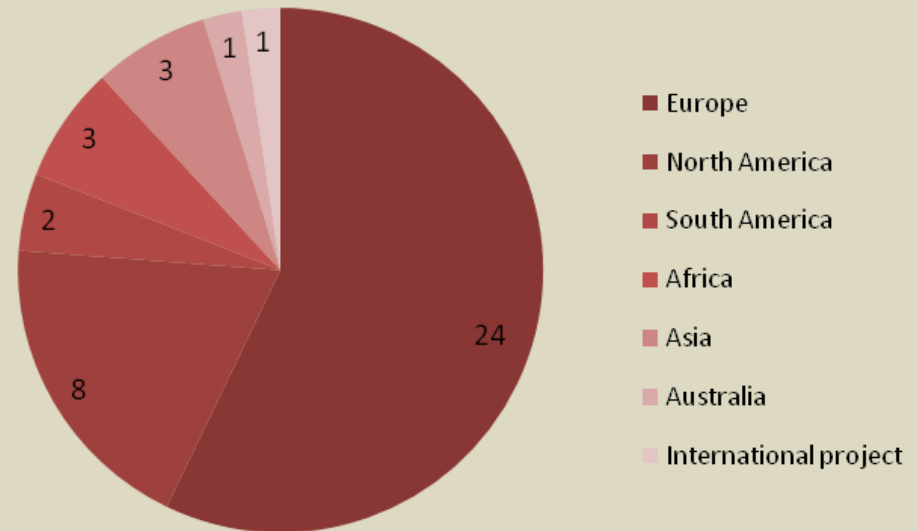
- 32 users responded to the call – another 10 joined later as champion users.

1	CariCOOS	22	Jaxa
2	CEFAS	23	Kordi
3	CNR	24	LOICZ
4	CSIR	25	Mississippi State University
5	CSIRO	26	NASA OBPG
6	DALHOUSIE / BIO / DFO	27	NOAA
7	DFO QUEBEC	28	PML
8	DMI	29	ROFFS
9	EEA	30	SYKE
10	EMI	31	Stockhom University
11	GKSS	32	UNICAN
12	HCMR	33	Ifremer
13	ICISS UCSB	34	NIOF
14	INRH	35	IOW
15	EPA	36	GKSS-Arktic
16	Marine Institute	37	INCOIS
17	Techworks	38	Eomap
18	UCC	39	Pabellon IAFE-Ciudad Universitaria
19	MRI for Marine Science - NUI, Galway, Ireland	40	INPE
20	NUIM/DCU	41	IVM
21	ITC	42	NIVA

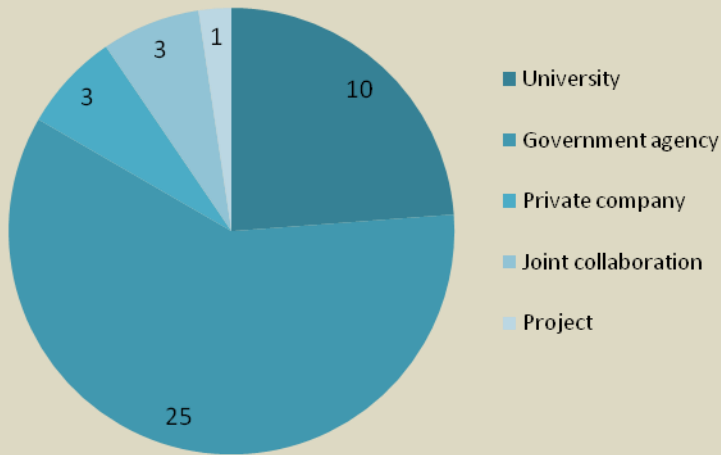
Users overview

- Globally distributed users:

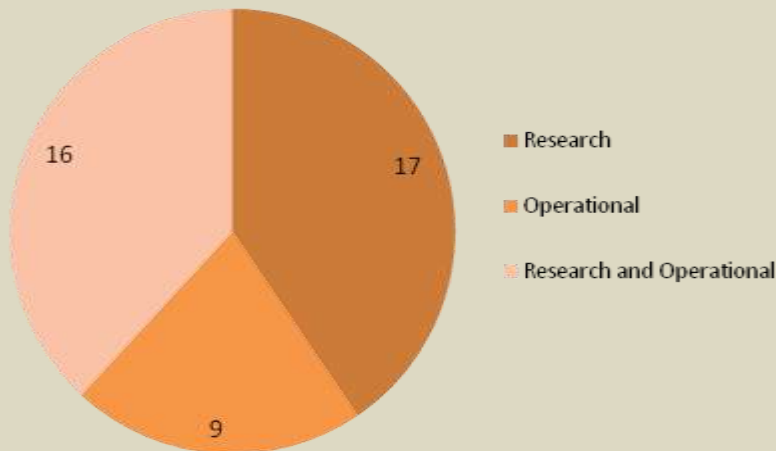
- Europe, India, Japan, Korea, Egypt, Brazil, South Africa, USA, Canada, ...
- International project LOICZ



Users overview



- Scientific community studying the bio- and geophysical processes in coastal waters;
- Companies and government agencies specialised in providing water quality information services (e.g. aquaculture industry, local authorities managers)

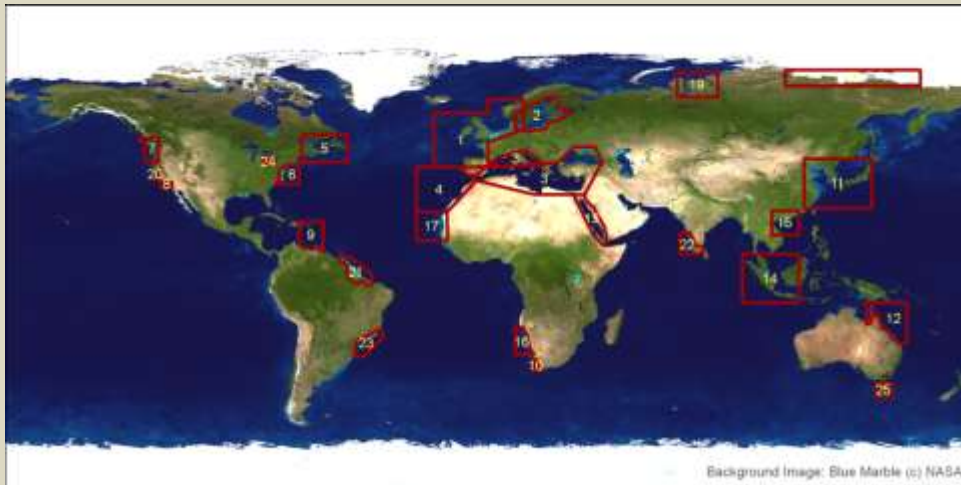


GENERAL USERS OBJECTIVES:

- Develop and improve algorithms for specific areas (MERIS bands are recognized as being suitable for algorithm improvement);
- Final validated products – clients; monitoring activities – EU directives (Water and Marine Strategy Framework directives);
- Data assimilation (modelling);
- Intercomparison of sensors data;
- Help planning future OC missions;
- Early warning system for coastal waters.

Sites requirements

- Requirements, current activities and geographic areas of interest
- 12 sites defined reviewed at the kick-off meeting – 27 sites now included



Site	Location
1	Northern West Shelf
2	Baltic Sea
3	Mediterranean and Black Sea
4	Morocco
5	Acadia
6	Chesapeake Bay
7	Oregon and Washington
8	Plumes and Blooms
9	Puerto Rico
10	Benguela
11	China, Korea, Japan
12	Great Barrier Reef
13	Red Sea
14	Indonesian Waters
15	Beibu Bay
16	Namibian Waters
17	Cape Verde
18	Lena Delta and New Siberian Islands
19	Kara Sea
20	Central California
21	French Guyana and Amazon Delta
22	South India
23	Antares - Ubatuba
24	Lake Erie and Lake St. Clair
25	Tasmania
26	Gulf of Mexico
27	Mar de la Plata

- **STANDARD PRODUCTS**

- Level 1P (TOA radiances and reflectances; pixel classification flags)
- Level 2 radiometric (RLw; RnLw)
- IOP (at 443nm: a_tot, b_tot, a_pig, a_gelb, a_pom)
- AOP (Kd for MERIS bands 1-7,9; z90max; Secchi disk depth from Kd; FLH)
- Concentrations (Chl, TSM, CDOM)

- **Unlikely to be produced**

- PFTs (phytoplankton functional types); Particle Size distribution; Kelp detection (maybe using MCI)

Products requirements

Experimental Products	
Turbidity in Formazine units	<p>→ shall be generated for sites</p> <ul style="list-style-type: none"> (1) North Sea et al (2) Baltic Sea (11) China, Korea, Japan (14) Indonesian Waters (15) Beibu Bay (18) Lena Delta and New Siberian Islands (19) Kara Sea
1% depth of PAR	<p>→ shall be generated for sites</p> <ul style="list-style-type: none"> (12) Great Barrier Reef (25) Tasmania
Primary Productivity or Potential Primary Productivity	<p>requires the knowledge of PI parameters, PPP is without nutrient limitations;</p> <p>→ shall be generated for sites</p> <ul style="list-style-type: none"> (1) North Sea et al (2) Baltic Sea (4) Morocco (5) Acadia (11) China, Korea, Japan (12) Great Barrier Reef (17) Cape Verde (25) Tasmania

Products requirements

Experimental Products	
Phytoplankton Biomass estimates in gC m ⁻³ or gC m ⁻² units	→ shall be generated for sites (2) Baltic Sea (4) Morocco (17) Cape Verde
Concentrations of some taxonomic of functional groups such as coccolithophorides, Cyanobacteria etc	if abundant in dominating concentrations; → shall be generated for all site because LOICZ would like to get it. Without LOICZ this parameter is asked to be generated for (1) North Sea et al (2) Baltic Sea (5) Acadia (6) Chesapeake Bay (7) Oregon and Washington (11) China, Korea, Japan (14) Indonesian Waters (15) Beibu Bay (16) Namibian Waters (17) Cape Verde (18) Lena Delta and New Siberian Islands (19) Kara Sea (24) Lake Erie & Lake St. Clair
Effective Fluorescence	Derived from difference of water leaving radiance reflectance between direct output of neural network and difference between top of atmosphere reflectance (RLtoa) and path radiance reflectance (RLpath).

OTHER requirements

- **Uncertainties and accuracy:**
 - Users require comparison of the CoastColour products with current standard products, as well as with in situ measurements – hope to see significant improvement.
- **Spatial and temporal resolution:**
 - Importance of FR (300m data) due to heterogeneity of coastal areas and need of very close to coast data.
 - First to 2km and 5km off coast;
 - Data prior to 2005 (for development and refinement of users algorithms)
 - Avoid large temporal gaps (merging of RR and FR)

OTHER requirements

- **Product delivery** (NRT, access and format):
- Archived data important for algorithm developers;
- 23 of the 42 users requested NRT – 1day to 1h - (deduced from application);
- DDS (of critical importance for African users) and Online access;
- Files “easy to use”, format shall be:
 - self-describing and self-contained
 - supported by a number of imaging applications and software libraries
 - well-known and accepted within the EO user community.

Requirements Baseline document will become
available on-line

www.coastcolour.org