Summary of GOFC Design Team Meeting, Washington, DC, 1998/01/29-30
Overall Strategy, Design Team Tasks, and Schedule

Overall Strategy

1. Engage users to define/confirm requirements
    1.1. Maximize use of existing contacts
    1.2. Look for commonalities in classes of users
        1.2.1. Science community
        1.2.2. International organizations (FAO, UNEP)
        1.2.3. National and regional forest agencies
        1.2.4. International treaties and conventions
    1.3. Ensure good user representation on design teams
    1.4. Coordinate user contacts and user requirements through Communication and Coordination (C&C) design team
2. Design team tasks to be established by conclusion of this meeting
3. Detailed design to be completed by November CEOS plenary
    3.1. Consider potential demonstration products for November CEOS plenary
4. Pilot Projects in 1999/2000
5. Execution phase in 2001/2002

The following design team tasks and schedule were drafted and agreed to at the GOFC Design Team meeting in Washington, January 29 and 30, 1998. This is a draft document subject to revision by the design team co-chairs.

Data acquisition, processing, and access (DT/DAPA)
(Co-chairs Peter Churchill, Chris Justice, Martha Maiden, Jean-Paul Malingreau)

"Plan to secure thematic (TBD) coverage of forests of the world to a time to be decided with resolutions to be decided"

10-yr strategy until 2010 (which is the date of the next FAO assessment)
5-yr plan
Magnet drivers (e.g. legislation) => Information requirement => Product information => Processing requirement => Identify actors and operational players , e.g. commercial providers, stakeholders, users => Identify data supply and requirements.

- Identify information that is required (Ottawa workshop, users/stakeholders, and DT5 [Communication and Coordination])
- Create data flows from acquisition to products and information, in collaboration with Coarse and Fine Resolution product design teams
- (acquisition <=> product) (prototype / operational)
- Detailed design needed for
    - A system and organization to coordinate data acquisition
    - A prioritized list of data sources, including price and access for each
    - Processing facilities to produce geocoded products overlaid on a common grid
    - Archive, catalog, and access system for all data and thematic products (probably a distributed system)

- Identify gaps and potential gaps in data product creation and provision
- Analyse process for prototype operational constituents of push/pull system
- Involve prototype stakeholders (a few large stakeholders who have an important requirement)
- Provide access to catalogue system and distribution of data
- Provide information to CEOS plenary on new requirements
- Determine players (by type) for each step in the data flow and involve them for each data flow
- Identify actors – research, operational, commercial, value-added, stakeholders, users
- Look for synergy in requirements of coarse and fine resolution products
- Define strategy for graceful transition to routine operation

Calibration-Validation (DT/Cal-Val)

(Co chairs Alan Belward and someone to be identified to replace Diogenes Alves who has asked to become a member of DT/Fine)

- Specify Instrumental calibration requirements (accuracy and precision)
- Specify algorithm validation procedures
- Determine user product requirements for reliability and precision
- Prioritize validation efforts, considering criteria such as existing efforts, areas of greatest international interest, and important forest nations
- Define a validation strategy for each product, building on existing work
- Consider if these should be multi-level
- Confidence-building approaches
- Statistically-based approaches
    - Those requiring ground access
    - Those which can be performed with aircraft
    - Those which can be performed with high resolution satellite data
- Determine optimum and possible levels of validation; ensure that products will still have value if minimum levels of validation are possible
- Define which organizations will actually carry out the validation work, recognizing that the "world is too big for one organization", and that validation is a good opportunity for national involvement. This should be defined for the GOFC (5-year) timeframe, and for ultimate operational implementation by "a neutral body"

Fine Resolution Products (DT/Fine)

(Co chairs David Skole and Victor Taylor)

Goal: To develop reasonable and feasible prototypes and tests of an end to end product generation system for forest cover products from high resolution sources of data which could be operationalized for a range of applications and user requirements.

Charge to design team: to identify the scope of key applications/communities (global and regional), for example:

- International global change research community for land cover (IGBP);
- International forest policy and assessment agreements (G-8 talks look particularly promising) and key user groups (e.g. FAO)

- Land Quality Indicators (LQI), Criteria and Indicators of Sustainable Forest Management
- National needs
- Regional or ecosystem applications (cross-border)

Identify key windows of opportunity for achieving integrated applications (e.g. Miobo woodlands)

Objective: Specify and design a system which will produce a suite of testbed level 2 and level 3 products for targeted users over a five-year timeframe, with an infrastructure to support this beyond five years.

Need:

- Facilities (e.g. EDC, Frascati)
- Talent and capabilities
- Network to provide the interaction and cohesion

Design must include both engineering and institutional/programmatic considerations

Identify

- current and near-term technical and non-technical gaps and obstacles (e.g. data policy)
- points of collaboration and contribution with ongoing programs for leverage (e.g. data collection and analysis, FAO Needs Assessment Project, etc.)

Issues to consider:

1. Acquisition
    1. where? (prototype coverage and a real extent)
    2. need acquisition model
2. How to engage foreign ground stations? - want to see coherent/solid participation in GOFC by foreign ground stations.
3. Preprocessing: product level requirements and issues
4. Level 1 data
5. ancillary data requirements
6. multi-sensor needs
7. need strategy for design team support
8. specify algorithms to meet Level 2 product specifications
9. Thematic product generation: create a few “sell-off” demos
    1. classification legend(s)
    2. classification algorithm
    3. cross-resolution issues

It was proposed in the sub-group, and discussed and endorsed by the main group, that the majority of the effort of the Fine Resolution design team be directed toward the production of high quality “ready-to-classify” data products, rather than toward a global land cover classification. A few “sell-off” demonstration classification products would be produced for key users, but large-scale classification efforts would be left to the end user groups.

Coarse Resolution Products (DT/Coarse)
(Co-chairs Tom Loveland and Yashifumi Yasuoka)

1. Design Questions

1. What is a forest?
2. Classification legends (relate to fine resolution products)?
3. All land cover, or just forests?
4. Balance of top-down versus bottom-up approaches?
5. Global versus regional prototypes?
6. Potential for inter-sensor analysis?
7. Appropriate consistency between fine resolution and coarse scale products?
8. Appropriate scales for applying coarse scale products?

2. Design Objectives
3. User requirements
    1. Canvas user requirements for coarse resolution products
    2. Verify completeness of tentative slate of products
    3. Finalize and prioritize user requirements
    4. Recommend products to GOFC (should anything be added or dropped?)
4. Product development
    1. Develop specifications for each product
    2. Identify potential methods, data sources, and exiting product generation activities
    3. Define technical strategy for each product
    4. Identify potential participants
5. Strategic Process
    1. Pilot project requirements, activities, and participants
    2. Implementation requirements, activities, and participants
    3. Summary of milestones and measures of success
6. Linkages to other design teams
    1. Identify validation requirements
    2. summarize and data processing requirements
    3. identify interactions between fine and coarse resolution products
    4. determine special data management issues

Communication and Coordination (DT/C&C)
(Co-chairs Frank Ahern and Robert Davis)

1. **Collect, refine, and define user requirements**
    - **Agenda 21**
    - **Criteria and Indicators of Sustainable Forest Management**
    - **FAO**
    - **CFS**
1. **Make the information collected readily available**
2. **Provide within-project communication**
    - **Executive level: list server or list server plus web page**
    - **Nuts and bolts level: massive data transfers between locations**
        - **remember that not all parties will have the latest technology**
        - **draw on world expertise such Gap Analysis Project**
    - **Limited-access newsgroup on WWW**

1. **External communications:**
    - **Web Site**
    - **Strategy to communicate needs to CEOS**
    - **Engage user communities over the long term**
    - **funding/fundraising**
        - **core**
        - **project specific**
    - **Public Relations**
1. **Develop "global antennae"**
    - **track and assimilate what is coming**
        - **space programs**
        - **user programs**
1. **Develop strategy for on-going operational implementation of GOFC**

GOFC Design Teams

Name	Task	Co-chairs
Data Acquisition, Preprocessing, and Access (DAPA)	confirm user requirements, design data acquisition strategy and office; detailed level 1 product definition; strategy to achieve; define system to catalog, store, and distribute all products	J. P. Malingreau (EC), Chris Justice (UVa), Martha Maiden(NASA), Peter Churchill(JRC)
Fine resolution products	confirm user requirements, detailed design of all fine resolution products; strategy to achieve	David Skole (MSU),Victor Taylor(NASDA/JPL)
Coarse resolution products	confirm user requirements, detailed design of all coarse resolution products; strategy to achieve	Tom Loveland(EDC), Yoshifumi Yasuoka(National Institute for Environmental Studies of Japan)
Product validation	develop validation strategy for all products	Alan Belward(JRC), Zhiliang Zhu (EDC)
Communication and Coordination	Collect and document user requirements, define approaches to project communication, monitor developments in technology and user requirements, liason with users, eventual operational implementation	Frank Ahern (CCRS) Robert Davis(FAO)

Schedule for 1998

Date	Team	Activity or milestone
Now	All	Populate design teams (Frank to indicate key volunteers)
Mar. 1	All	Circulate names, funding needs, and potential sponsors for travel
March	Cal-Val	Meet in Ispra with WGISS
May "31"	All	Confirm product specifications in consultation with user reps.
September	All	End to end design review, define areas where clarification needed
September	C&C	Circulate draft design document for CEOS
October	All	Meet if necessary to finalize design document
November	C&C	Present design to CEOS