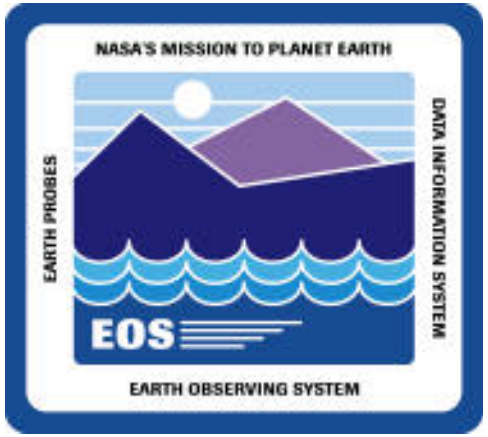
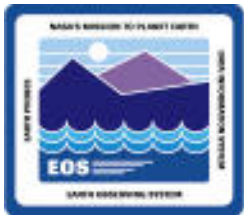


Workflow Analysis

John C. Lowry

January 28, 1997

Workflow Analysis: Purpose



Provides a basic agreement between developers and targeted users as to the functionality that must be supported, independent of a specific Graphical User Interface (GUI) design implementation

- **User needs and preferences for software functionality are represented in the workflows**
- **Permits developers to make their understanding of user's requirements explicit**
- **Trade-offs among competing design goals become explicit**

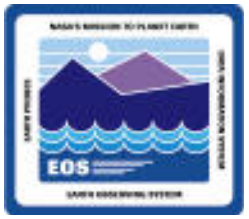
Evolves in an iterative manner with the design process

- **The workflows impact the design**
- **The design, in turn, impacts the workflows**

Auditable (in a collaborative sense)

- **Requirements are incorporated within the workflows**
- **Each workflow maps to specific GUI functionality(ies)**

Workflow Analysis



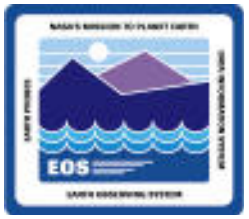
ECS standard methodology for design of all Graphical User Interfaces (GUIs)

- **unit of analysis: user-computer interaction**
- **definition of flow and sequence of flow for user-computer interaction**
- **provides basis for agreement as to above, prior to committing to a GUI design**

Used by ECS/CLS as a supplement to object modeling (i.e., object diagrams, event traces, use cases)

- **more tuned to GUI design**
- **more detailed sense of operations than present in typical use-cases**
- **improved mapping of analysis to GUI screens and dialogs**
- **better method of communicating design to 'tirekickers' and probable users than object models**

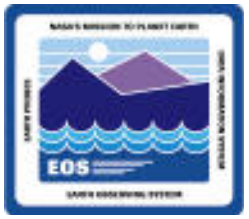
Interpreting Workflow Diagrams



Client workflows use several conventions to Define a Function-Subfunction-Task Hierarchy

- Functional decomposition through hierarchy:
  - Functions decompose into:
  - Subfunctions, which are further decomposed into:
  - Tasks (individual user-computer interactions)
- Employs a standardized symbology and numbering scheme to display the hierarchy
  - rectangles define operations
  - diamonds define decisions
  - arrowheads depict direction of interaction flow
  - Boolean ‘ORs’ and ‘ANDs’ support branching, looping, and recursive user-computer interactions
- Use of clear, unambiguous task statements, led by an action verb, provide a precise semantic and syntax to user-computer interactions
  - Example: Set minimum sun angle to default option. [Noun always assumed to be: User.]

Workflow Analysis:
CLS Processing Procedures



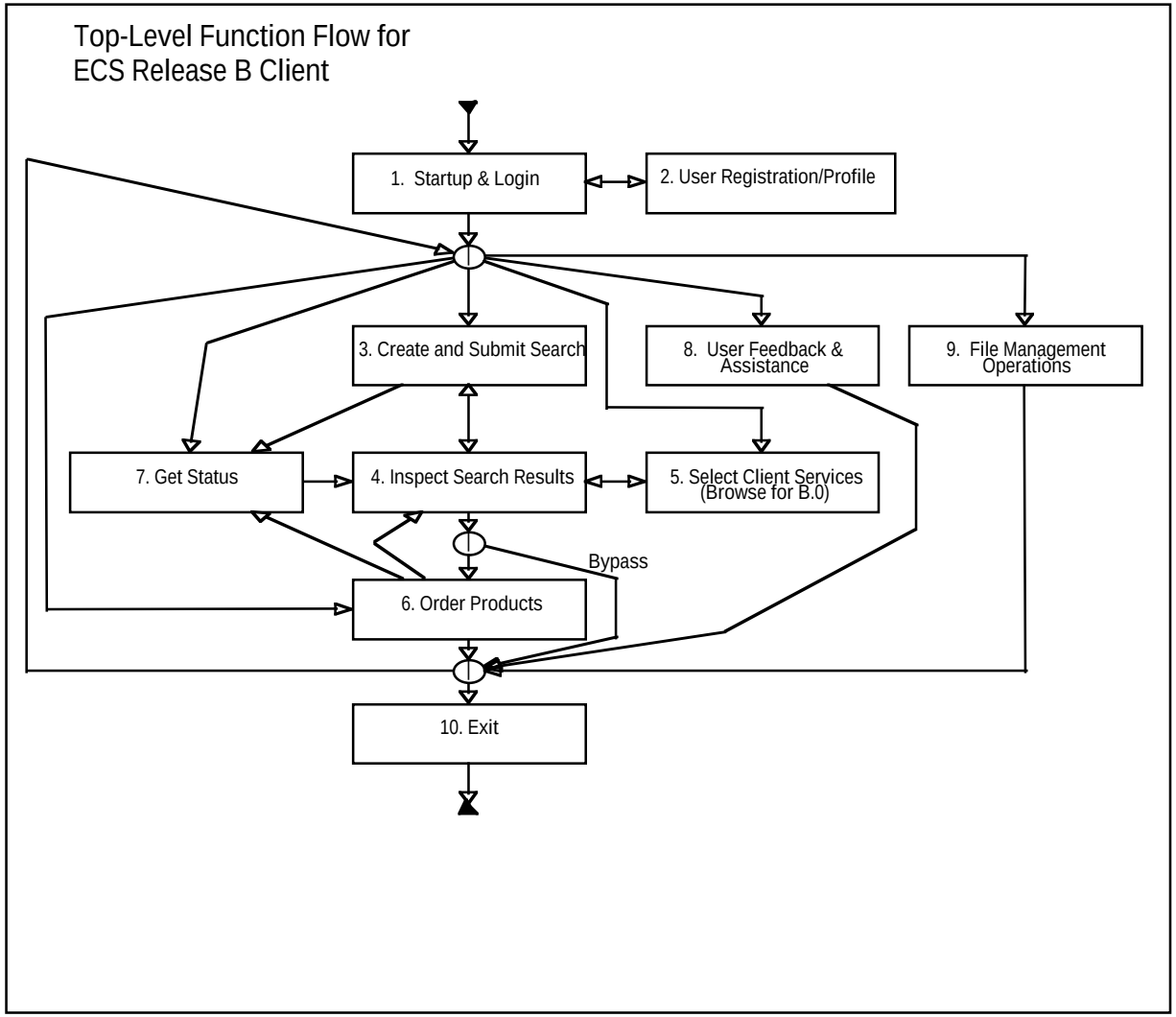
I. CLS design of Client Architecture began with individual efforts of CDWG Tiger Teams

II. Results of Tiger Teams put up on CDWG web site and manifest themselves finally in the Client workflows

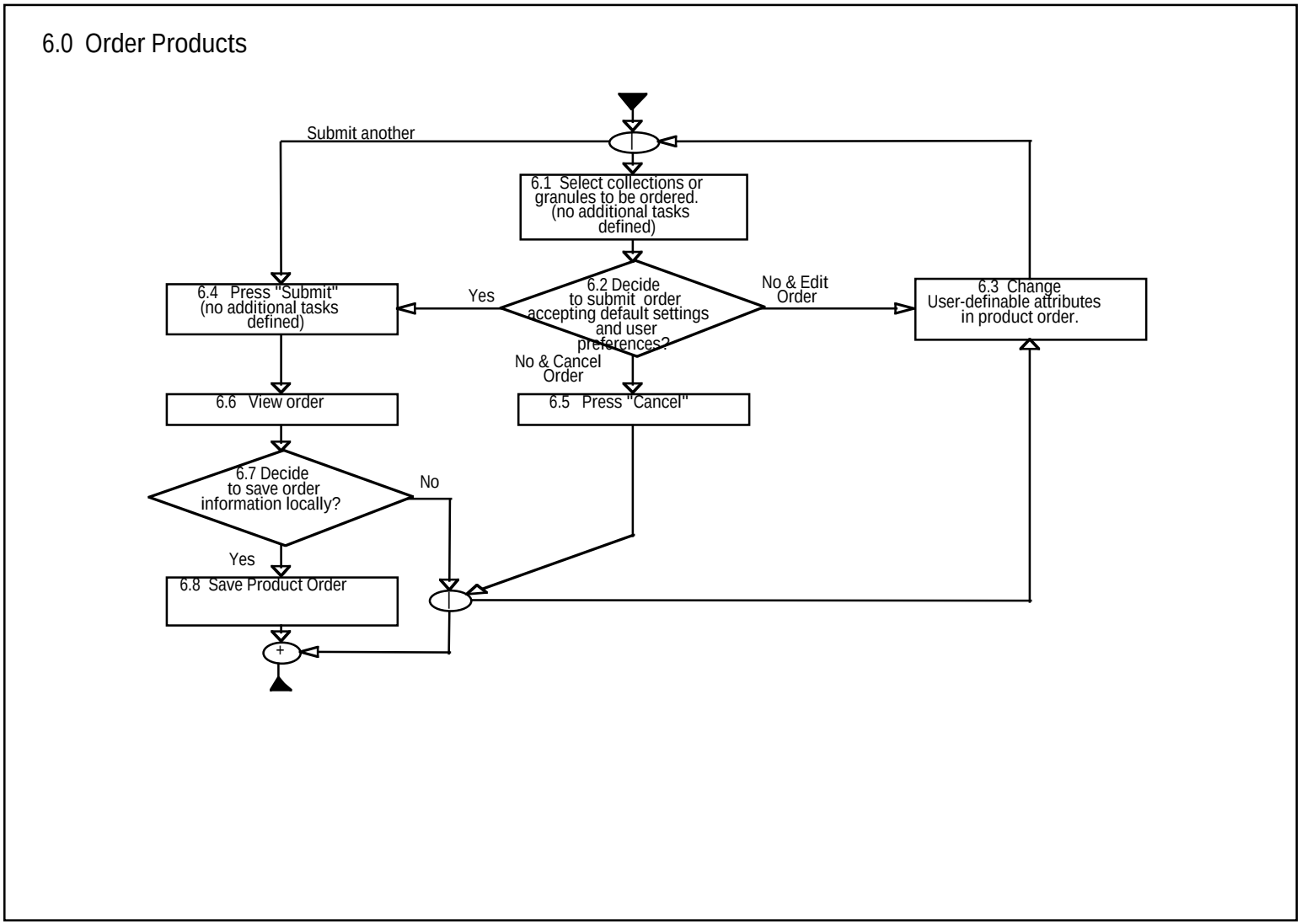
III. Workflows, submitted by individual tiger teams, are reviewed by CLS architect and human factors engineers for completeness, accuracy, compatibility with other workflows and are either (a) sent back to the tiger team for revision, or (b) integrated into CLS masters and posted on the CDWG

IV. CDWG tiger teams are closed out when the workflows are complete (among other CDWG actions)

Client Workflow: Client Functions



Client workflow: Subfunction 6.0 Order Product(s)



Client Workflow: Task 6.3 Change Attributes