



GSICS QA4EO

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Outline



- ◆ GSICS CEOS-WGCV QA4EO Review
- ◆ GSICS Procedure for Product Acceptance (GPPA)
- ◆ NIST Participation in GSICS
- ◆ GSICS Current Activities and Future Plans

QA4EO Review by GSICS



QA4EO reviewers from GSICS appreciated this very thoughtful and skilful effort on part of CEOS

There also were some questions and comments:

QA4EO Review by GSICS



Endorsement process: Is CEOS to endorse quality assurance plans of the whole EO community on behalf of GEO?

Recommendations from GSICS reviewers:

- ◆ Treat the QA4EO as community guidelines that CEOS WGCV can encourage organizations to adopt, and advise them in implementing.
- ◆ Need a QA4EO review panel, composed of members within and beyond the CEOS community.

QA4EO Review by GSICS



Revision of Key Guidelines: Can any organization from the EO community enlist necessary changes to the Key Guideline documents?

Recommendation from GSICS reviewers:

- ◆ Make the documents as living as possible
- ◆ Create a clear process by which this can happen

Recommendation from GSICS reviewers:

- Need POC for framing GSICS requirements into CEOS QA4EO?
- Need support in implementing QA4EO (e.g., FAQ on website)

Products Acceptance Procedure



The success of GSICS is intimately linked to the quality and usefulness of its products

The GSICS Procedure for Product Acceptance (GPPA) creates a path by which distribution-ready products from data providers around the world can be first carefully inspected, and then accepted as a GSICS product.

Quality assurance of product method, processing, results, and distribution is an integral theme in the "Acceptance" procedure.

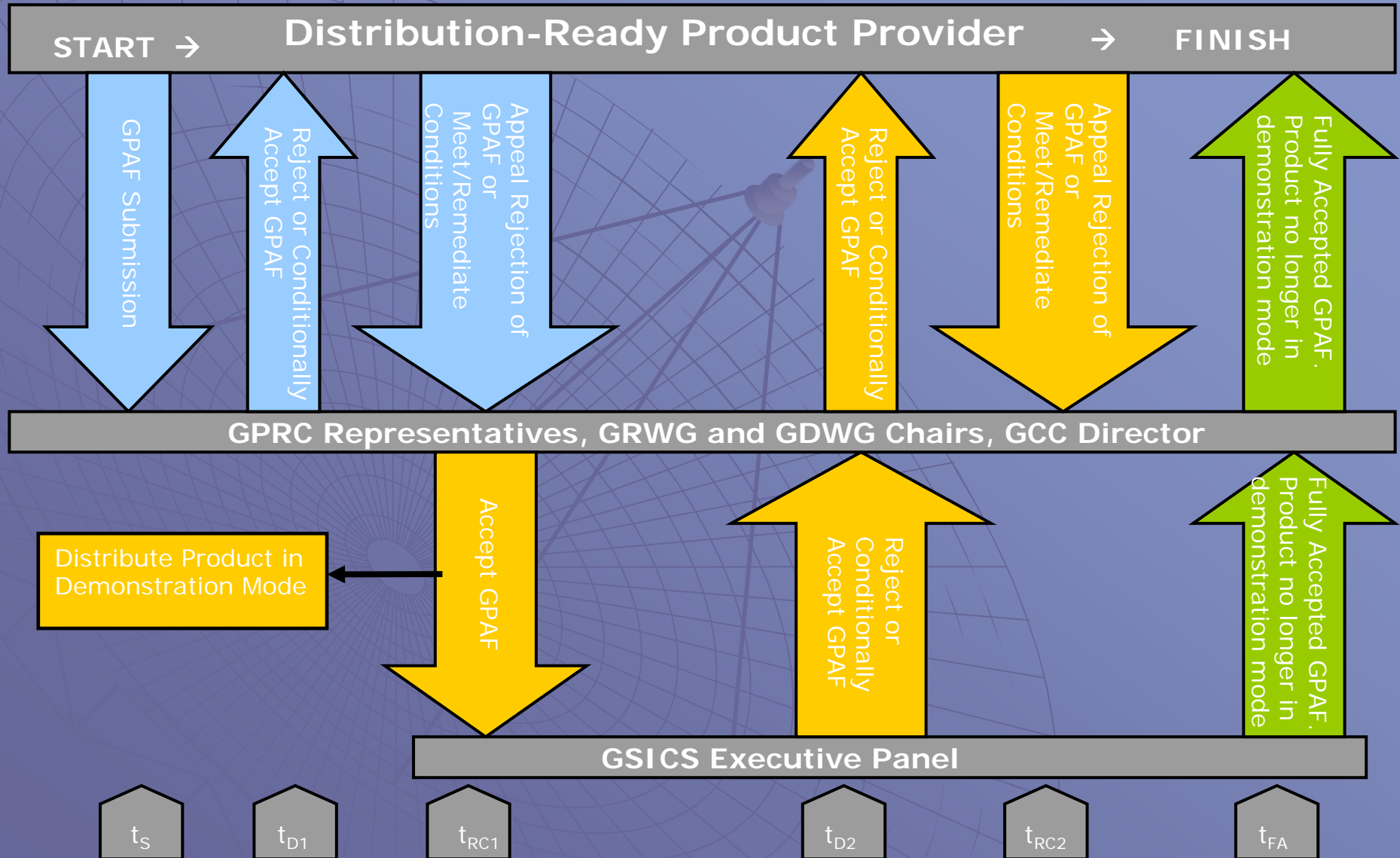
Products Acceptance Procedure



Major Steps of Product Acceptance Procedure:

- ◆ Complete supporting documentation requested in the GSICS Product Application Form (GPAF);
- ◆ The GPAF is scrutinized by GSICS Coordination Center, and Research and Data Working Group, Representatives; and
- ◆ If the application is accepted, the product enters into "demonstration mode," and the application is forwarded to the GSICS Executive Panel, who is responsible for the final decision to accept the product application.

GPPA Process



GPPA: Supporting Docs/Materials



◆ Establishing Product Physical Basis

- *Product Theoretical Basis Documentation* – Discussion of physical principles supporting the product. This could be in the form of references to journal article(s), or stand alone technical information.

GPPA: Supporting Docs/Materials



◆ Implementing Technique(s) to Generate Product

- *Procedure "Best Practices"* – Procedures that meet current "best practices" in regards to establishing analysis software, harnessing radiative transfer models, and making calibration/validation measurements (TBD) that are fundamental to implementing theory to create products.
 - ◆ *Establishing Analysis Software*
 - Algorithm flowchart, including data I/O and logic, and software module descriptions
 - Software that meets GSICS coding, I/O, filename, and documentation standards (TBD).
 - Software verification results
 - ◆ *Harnessing Radiative Transfer Models*
 - Detailed model description
 - User's Guide
 - Description of data or input atmospheric soundings and boundary conditions used by the model
 - Model verification results – Could be references to other test studies.
 - ◆ *Making Cal/Val Measurements*
 - Measurement Procedure Outline – Gives a description of the instruments involved, as well as information needed to know how the measurement(s) was taken and under what conditions. Also, describes the traceability of the measurement to international measurement standards.
- *Version Control Plan* - Describes process of performing software/model/measurement updates and archive.

GPPA: Supporting Docs/Materials



◆ Product Operations/Distribution

- *Operations/Distributions Plan* - Outlines how the data or results are to be stored and shared through GSICS network computers. Statements about the level of access need to be included here.
- *Data Quality Assessment Documentation* - Documents the estimated value and sources of uncertainty in the product.
- *Data User's Guide* – Documents detailed data format, quality flag and parameter descriptions. It must identify how data format meets GSICS standards, and the limitations of product use.

NIST Participation in GSICS



- ◆ Develop calibration/validation best practice protocols for GSICS community firmly established in the metrology community
- ◆ Provide guidance regarding application of methodologies to determine uncertainties estimates for GSICS products

GSICS Current/Future Activities



- ◆ Implement baseline GEO-LEO instrument inter-comparison algorithm for IR imager channels
- ◆ Develop correction algorithm and supporting data analysis to adjust the IR data of all operational GEO satellite imagers to a common reference (IASI)
- ◆ Implement the hierarchical ATBD for GSICS satellite instrument inter-comparison methods on the GSICS Wiki
- ◆ Establish a network of mirrored collaborative servers, data format templates, variable and file name conventions, and protocols to exchange information and data
- ◆ Establish format templates for document/software package documentation
- ◆ Test the GPPA with the current LEO-LEO inter-calibration system

Summary



- ◆ Review of QA4EO was found to be insightful to GSICS reviewers, and led to comments and questions to CEOS-WGCV
- ◆ GSICS Procedure for Product Acceptance (GPPA) has been established and is now under test
- ◆ NIST leads GSICS into the world of metrological best practices regarding data reporting and cal/val procedures
- ◆ GSICS is leading to an international collaborative development of satellite inter-calibration methods, and sharing of calibration data and information
- ◆ QA4EO is on the GSICS Executive Panel Meeting Agenda (June 2009)