QA4EO A QUALITY ASSURANCE FRAMEWORK FOR EARTH OBSERVATION

http:QA4EO.org

Initiated (2008) by "space-community" on behalf of GEO to facilitate harmonisation and interoperability

– Quality does not have to be "best" simply quantified

- 2012 NPL CCM (supported by UKSA) took on role of QA4EO secretariat

Applicable to all EO activities Including in-situ & modelling

QA4EO Principle

Data and derived products shall have associated with them a fully traceable indicator of their quality

CEOS

Led strategy

Quality Indicator

Traceability

Supported by an initial set of key guidelines – based on NMI best practise

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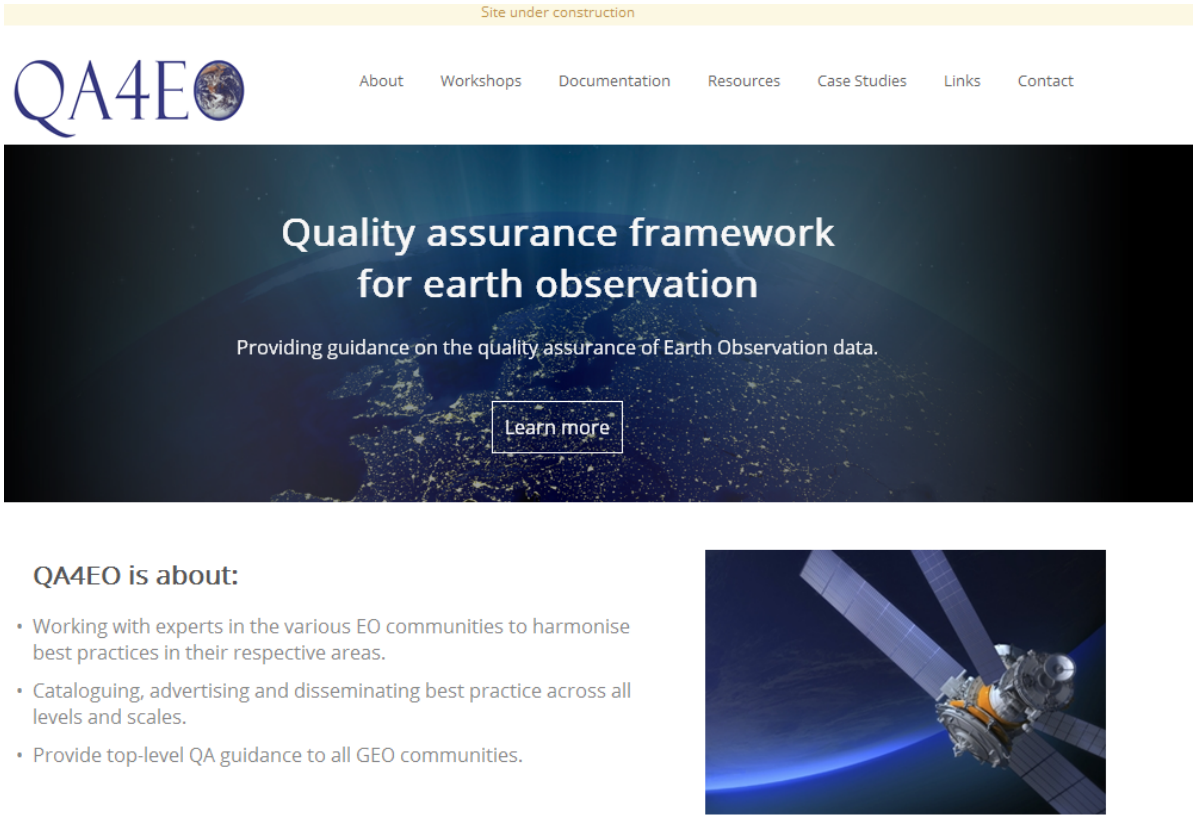
Progress:

- New-look website (Http:www.QA4EO.org)
- Establishment of concept and template for case study based promotion of Cal/Val/QA to different audiences
- Developed 'show case for CEOS SIT workshop
  - Support writing of examples
- Developed generic downloadable poster as community resource
  - Presented at conferences
- Promote concept across CEOS, GEO, (ESA/EU) etc
  - Included in ESA CCI
  - Also EU Copernicus and climate service (QA4ECV proj
  - Now being reported on by many space agencies
  - Presented at conferences



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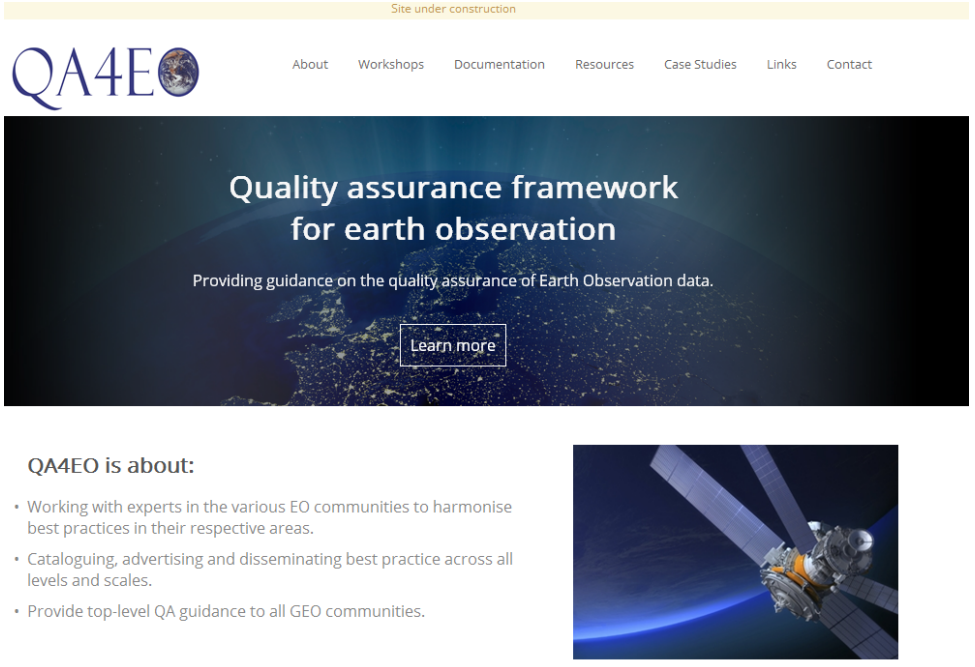
New-look website up online:

- Website redesign completed
- It has been updated and is now more dynamic and interactive
- New case studies page
- Comprehensive documentation
- Links to other international initiatives
- Going forward - Will be developing a graphical 'easy access' to guidelines and key QA information
- Expand scope and awareness to broader GEO SBAs



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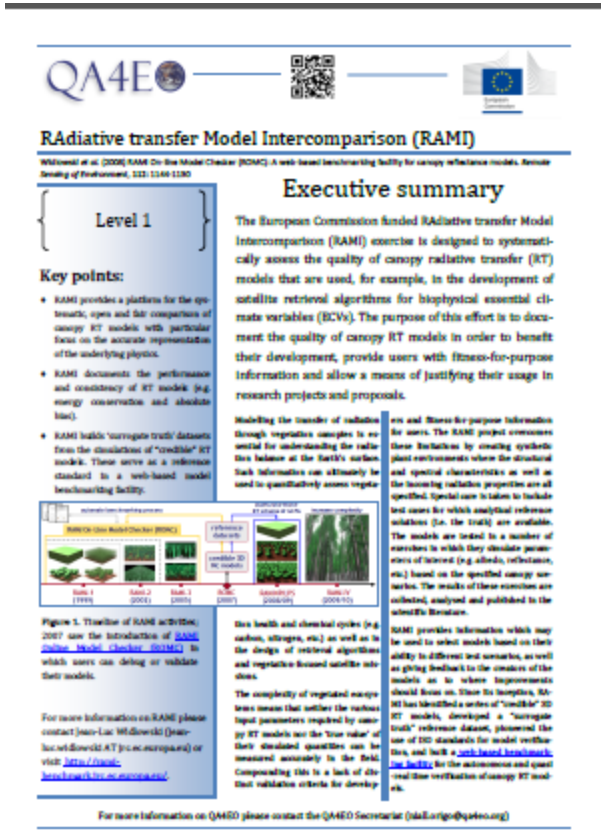
Case studies:

- Case studies corresponding to best practice examples are published online
- Split into three tiers and three broad categories
- Categories include software/methods, datasets and initiatives
- Higher ‘levels’ correspond to greater detail for different target audience
- Focus on getting examples of all three levels of detail



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RAdiative transfer Model Intercomparison (RAMI)

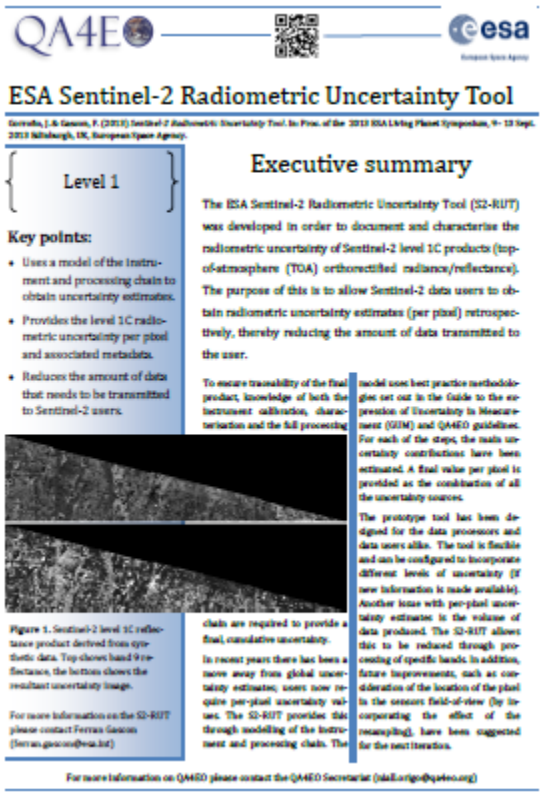
Level 1

Key points:

Executive summary

The European Commission funded RAdiative transfer Model Intercomparison (RAMI) exercise is designed to systematically assess the quality of canopy radiative transfer (RT) models that are used, for example, in the development of satellite retrieval algorithms for biophysical essential climate variables (ECVs). The purpose of this effort is to document the quality of canopy RT models in order to benefit their development, provide users with fitness-for-purpose information and allow a means of justifying their usage in research projects and proposals.

For more information on QA4EO please contact the QA4EO Secretariat (ola.f.orige@qa4eo.org)



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esa

ESA Sentinel-2 Radiometric Uncertainty Tool

Level 1

Key points:

- Uses a model of the instrument and processing chain to obtain uncertainty estimates.
- Provides the level 1C radiometric uncertainty per pixel and associated metadata.
- Reduces the amount of data that needs to be transmitted to Sentinel-2 users.

Executive summary

The ESA Sentinel-2 Radiometric Uncertainty Tool (S2-RUT) was developed in order to document and characterise the radiometric uncertainty of Sentinel-2 level 1C products (top-of-atmosphere (TOA) orthorectified radiance/reflectance). The purpose of this is to allow Sentinel-2 data users to obtain radiometric uncertainty estimates (per pixel) retrospectively, thereby reducing the amount of data transmitted to the user.

For more information on QA4EO please contact the QA4EO Secretariat (ola.f.orige@qa4eo.org)

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Case studies: Concept

A tiered system based on target audience

- Show and tell
- Promote work of good QA
- Quick wins

e.g. policy makers, managers, funding bodies, etc.

e.g. scientists in similar fields who understand the problem

e.g. scientists who have a similar product/ software/ dataset/ etc.

Level of detail

Level 1

Level 2

Level 3

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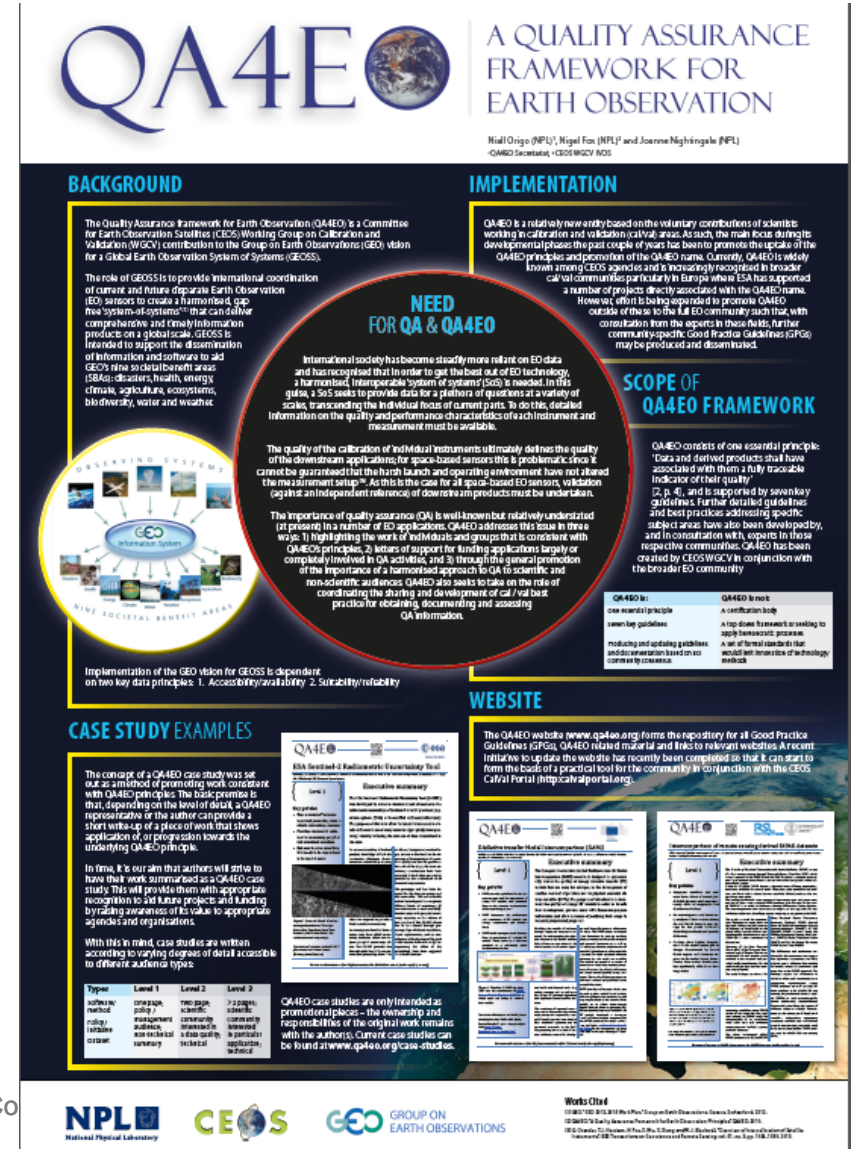
- Promotional poster established for presentation at international conferences
- Implementation and awareness across worlds space agencies increasing
  - CEOS work plan to encourage agencies to regularly report on their progress
  - Work with GEO secretariat to build broad based implementation across all EO including in-situ
  - Develop broad range of examples to illustrate means of implementation
- Establish a reporting template to help ‘self assessment of Cal/Val QA based on concepts of ‘maturity matrix’



Next steps

- **Need case studies (best practise, Cal/Val successes, when things went wrong/well,**
  - **Means to help promote need and value of Cal/VAL**
- **Broader use of name (QA4EO) by all agencies when referring to key principles: 'Documented evidence of traceability to international (SI) standards with full uncertainty budgets'**

- **QA4EO secretariat (there to help develop publicise story line).**