The GOFC-GOLD Fire – Global Wildfire Information System (GWIS) Partnership

Chris Justice

(GOFC-GOLD Fire Implementation Team)

UMD

GOFC- GOLD Fire

- GOFC-Fire Implementation Team established in 1999 as a component of GOFC-GOLD (est. 1997)
  - Chris Justice (UMD) and Johann Goldammer (GFMC) as Co-chairs.
  - At that time, no sensors were in orbit, with elements designed specifically for fire monitoring - that has changed largely due to the efforts of the IT Members and the fire monitoring community

- Recent election of new Co-Chairs (Nov. 2016)
  - David Roy (SDSU, USA)
  - Martin Wooster (KCL, NERC NCEO UK)
  - Jesus San Miguel Ayanz (EC JRC, Italy)

  - Fire Regional Network Coordinator – Krishna Vadrevu (NASA MSFC, USA)

- GOFC Fire IT Office supported by NASA LCLUC Program (Garik Gutman)
  - www.GOFC-Fire@umd.edu

GOFC – GOLD Fire Objectives

- The overarching principles of GOFC-Fire have remained largely unchanged since 1999, when the stated goals were:
  - transitioning experimental missions into the operational chain,
  - promoting the provision of high quality operational fire products;
  - provision of frameworks for multi-sensor calibration and validation;
  - supporting the maintenance of long term data records of EO fire data;
  - encouraging widespread, free and rapid access to EO data for fire monitoring and mapping;
  - working with the user community through regional networks to define requirements for observations and dissemination and increase the use of existing EO data

Current FIRE IT Membership

Arino, Olivier
IT member, ESA/ESRIN, Italy

Boschetti, Luigi
IT member, University of Idaho, USA

Brivio, Pietro Alessandro
IT member, CNR, Italy

Chuvieco, Emilio
IT member, Univ. de Alcala, Spain

Csiszar, Ivan
IT member, NOAA, USA

de Groot, Bill
IT Member, Canadian Forest Service

Eckehard, Lorenz
IT member, German Aerospace Center

Frost, Philip
IT Member, CSIR-Meraka Institute South Africa

Giglio, Louis
IT member, Univ.of Maryland, USA

Goldammer, Johann
IT Member, GFMC, Germany

Hoffman, Anja
IT Member, Germany

Justice, Chris
IT Member, Univ. of Maryland, USA

Lynham, Timothy
IT member, Canadian Forest Service

Roy, David
IT Co-Chair, South Dakota State University, USA

San-Miguel-Ayanz, Jesus
IT Co-Chair
European Commission, Italy

Schmidt, Michael
IT member, Conabio, Mexico

Schroeder, Wilfrid
IT member, NOAA, USA

Tansey, Kevin
IT member, Univ. of Leicester, U.K.

Vadrevu, Prasad Krishna
IT Member Regional Coord.
NASA MSFC, USA

Van der Werf, Guido
IT member
VU University Amsterdam Netherlands

Wooster, Martin
IT Co-Chair
King's College, London
NERC NCEO

Role of GOFC Regional Networks

- Mechanism for regional scientists and practitioners to participate in the GOFC-GOLD program and connect to the Implementation Teams providing:
  - Articulation of Regional Priorities
  - Sharing of Regional Expertize
  - Venue for Training and Capacity Building
  - Calibration, Validation and Evaluation of Fire Data Sets

- Close Partnership with the SysTem for Analysis Research and Training (START)

- *User driven training workshops can be organized, where current techniques are learnt. In addition to workshops, a mechanism for information exchange can be set up. Regional networks affiliated to universities or colleges in the region should help provide the training that will ensure development of capacity in the long term.*

- *To ensure that capacity building is maintained, the regional networks should form or strengthen their linkages and partnerships to international development agencies and organizations.* "Revised Strategy 2006" (GOFC-GOLD Report No. 24)

GOFC-GOLD Regional Network Summit, Tbilisi, Georgia Sept. 2017

Global Wildfire Information System (GWIS)

- Need for a Global Fire Information System long recognized (1993 Andrea et al., at Dahlem Fire Conf., 1998 Ahern et al., by CFS in GOFC)

- GEO GWIS Evolution
  - The GWIS was proposed by JRC at GOFC FIRE IT Meeting, Stresa 2011 focused on systematic data and information provision
  - GWIS proposal submitted to GEO WP 2012-2015 and adopted as GI-09
  - GWIS resubmitted and adopted in the GEO WP 2017-2019 (Ayanz and Justice)

- GWIS developed based on the European Forest Fire Information System (EFFIS) w. support from EU GMES and now EU Copernicus
  - Land and Atmospheric Monitoring and Emergency Services

- Goal of providing Harmonized Wildfire Information at local, regional, global scales.

GOFC - GWIS Partnership

- Provides an internet based portal and repository of fire information aimed at enabling a comprehensive view and evaluation of fire regimes and fire effects in support of policy making

- Provides a focused activity on data and information harmonization and dissemination

- Strengthening Regional Networks (data users) – annual joint meetings w. IT, regional workshops/training, data validation activities

- Cooperation with global/regional/national fire data service providers

- Addressing IT/interoperability issues

First Fire IT / GWIS meeting

SANTIAGO – CHILE

Universidad Mayor, campus Huechuraba, Camino La Pirámide 5750, Huechuraba.

November 15th 2016 - GOFC-GOLD Fire Implementation Team Meeting (closed door session, 1 day)

November 16th 2016 – Global Wildfire Information System (GWIS) Meeting (closed door session, 1 day)

November 17th 2016 – *Characterization of Fire Regimes and Impacts* (open conference session, ½ day)

GOFC Fire IT / GWIS Meeting ForestSAT Conference, Chile 2016

Current Fire IT and Regional Network Priorities

- **Developing a more active Fire IT agenda**
  - Elevating importance of fire to the space agencies
    - Defining the optimal fire monitoring system of systems (feeding into GEO)
    - Product characterization, requirements and accuracy/validation (GCOS ECV)
  - Guiding the community on fire product capabilities and outreach
    - Known product capabilities, limitations, example case studies through websites
    - Best practices: e.g. fire validation (CEOS LPV), REDD+Fire
    - Community briefings on current status of systems and products
  - Strengthening use of the EO data at the Regional/National Level
- **Some relevant upcoming initiatives**
  - Small fire mapping and characterization
  - Agricultural fire mapping and characterization
  - Robust product validation and user guidance (given proliferation of products / policy relevance}
- **GWIS to help strengthen Regional Networks**
  - RN leads attend Fire IT but need to improve Fire IT meeting reporting back to RN membership
  - Advocate for RN funding opportunities
    - Visiting scientist program
    - Proposal opportunities
    - Regional Projects
  - GWIS evaluation exercise

Next Fire IT / GWIS Meeting

London, November 20-23rd 2017
hosted by Martin Wooster, funded by European Commission GWIS

- Revision of membership / membership process / GOFC Fire IT Secretariat / funding
- Foreseen activities under the umbrella of GOFC Fire IT & GWIS
- Systematic/operational fire Product Updates
    - Active fire detection : SLSTR / Meteosat / MODIS / VIIRS products
    - Burned area: MODIS / VIIRS / ESA CCI / Landsat Sentinel 2B products
- Emissions estimation updates
    - GFED / GFAS / FREM
- Regional Networks overview & activities
    - SAFNET, REDLATIF & recent Brazilian Work, SEARRIN
    - Canadian Forest Service Active Fire Information and Fire Danger Rating & Early Warning
    - Balkan Network
    - Improving information exchange with Regional Networks
- Policy document updates
    - GCOS ECV Fire Update
    - UN-REDD Fire-GOFC source book /CEOS LPV Updates
- GWIS
    - Contributions to GWIS GEO work program 2007-2019
    - NASA GEO GWIS recent selections update