



Southern African Fire Network: Status, Remote sensing applications and fire management in Southern Africa

SAFNET Steering committee

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Presentation Overview

SAFNET overview

SAFNET history

SAFNET's role in SADC

Regional fire products

AFIS and the AFIS field terminal

Africa Monitoring for the Environment
project (AMESD)



SAFNET overview

In 2002 SAFNET became a regional network of GOFC-GOLD to provide a forum for users and researchers operating in Southern Africa, and represent a link between national agencies and user groups and the global user/producer community.





Previous meetings

| Date | Location | Significance |
|------|--|--|
| 2000 | Lisbon Portugal | 6 countries represented, with focus on MODIS validation |
| 2001 | Siavonga Zambia | 6 countries represented. Held in collaboration with SAFARI 2000 |
| 2002 | Gaborone Botswana | 7 countries involved. Sponsored by MODIS Validation, UNDP Gaborone, and University of Botswana. Goal, vision and objectives of SAFNet were defined; SAFNet country contact points system established and a website established |
| 2003 | Kruger National Park South Africa | 11 countries with greater engagements of other organizations e.g. networks, Stronger emphasis on fire and satellite application science; definition of SAFNet focus areas and identification of Team leaders Conduct training in use of MODIS active fire data as well as validation issues. |

| | | |
|------|---|--|
| 2004 | Mangochi Malawi | <p>14 countries, Sponsors: START's GOFC-GOLD, NASA, Land cover Project and UNEP/DEWA and its partners. Focus areas, more attention on community Fire management</p> <p>Publication of this 5th SAFNet proceedings, development of a Fire Africa wide case study chapter book and use of social science methods to evaluate use of satellite based fire products among the SAFNet community leading to a publication</p> |
| 2006 | Maputo Mozambique | <p>Over 40 participants from 8 countries. Sponsored through redirected GOFC-GOLD regional network coordination funds; the Mozambique Government and with over half of participants sponsored by their Government.</p> <p>Great emphasis on fire and weather; fire forecasting, fire danger rating and fire early warning, need to bring Meteorological Services into fire issues</p> |
| 2008 | Caprivi Namibia | <p>Over 60 participants from 9 countries attended the workshop Titled; <i>Towards Effective Regional Fire Management, Policies and Operations status.</i></p> <p>The workshop included 2 training sessions on Landsat burned area mapping and MODIS fire products in fire management.</p> |
| 2011 | Wildland Fire Conference Sun City | <p>Training on the use of operational fire predictions, detections and assessment products disseminated to all Southern African countries via the AFIS field terminals</p> |



SAFNET Focus Areas


Provision of satellite based fire products

Systematic fire monitoring and management

National to Regional Fire monitoring

Regional validation of fire products

Capacity building and training



GOFC-GOLD

**UN, WMO, ICSU,
Global change-
ESSP& IPCC**

**CSIR Satellite
Application
Center**

**SADC Regional
Remote Sensing
Unit**

**Southern Africa Fire
Network (SAFNet)**

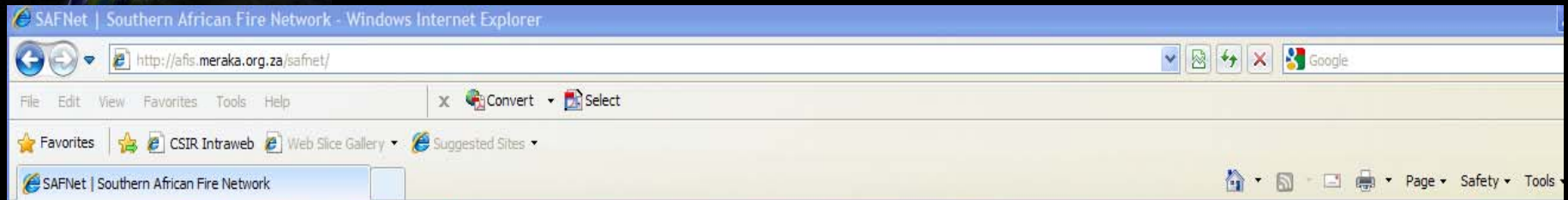
**Meteorological
Departments**

**Fire Monitoring /
Management
Departments.**

**NGOs, CBO and
Networks -etc.**

Community

SAFNET website



SAFNET Southern African Fire Network



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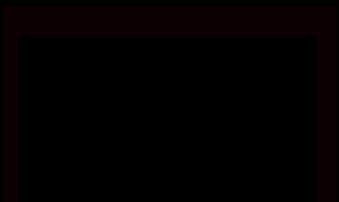
Welcome!

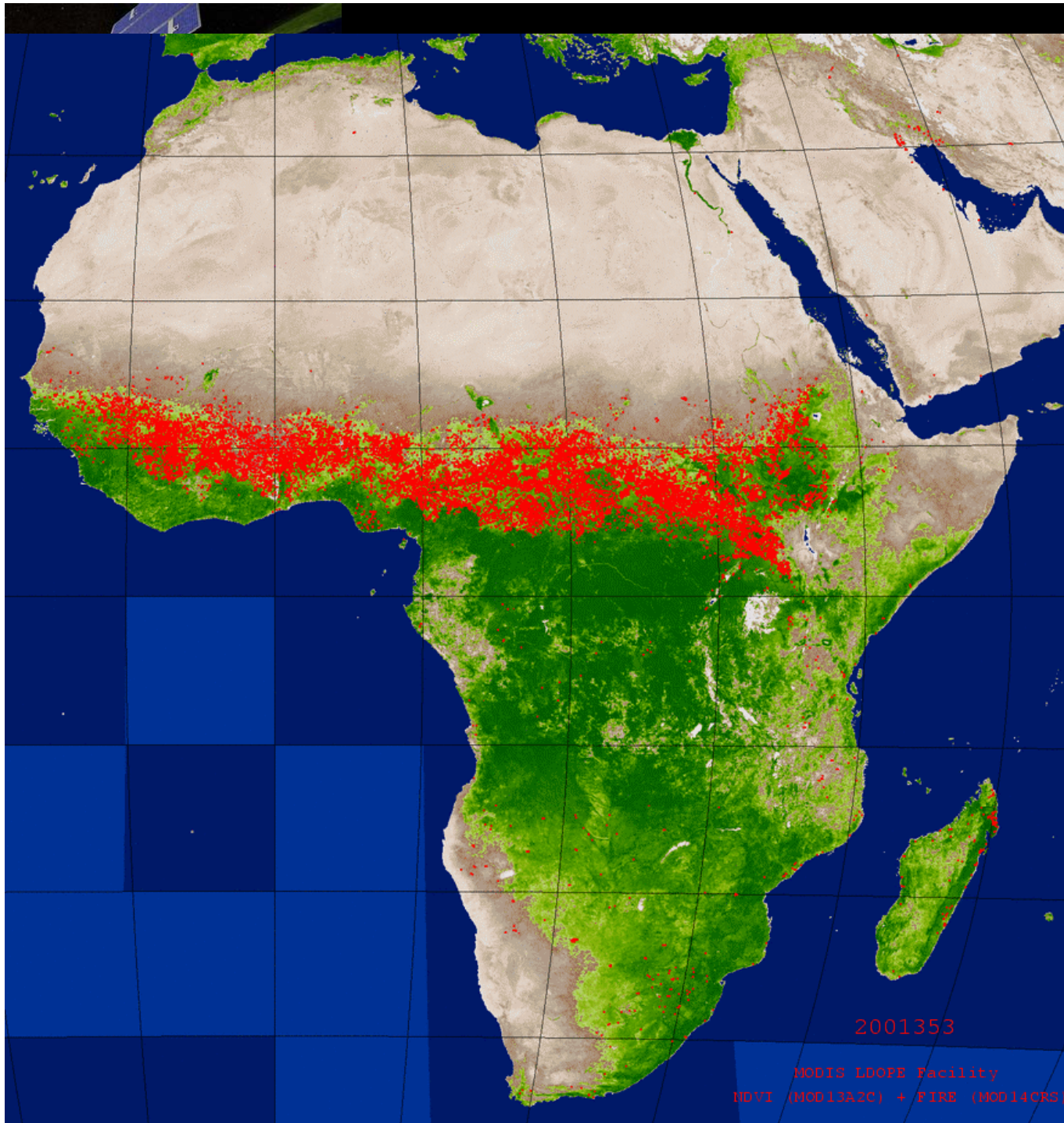
The **Southern African Fire Network** is a regional network that fosters collaborative efforts in fire monitoring and management in southern Africa. SAFNet is a **Global Observation for Forest and Land Cover Dynamics (GOFC/GOLD)** regional fire network and contributes to meeting the goals of the GOFC/GOLD program. SAFNet was initiated using small seed funding grants from NASA, USAID (EMIS and GISD) and START. Future collaboration with partners and funding agents is being sought.





MODIS sample products



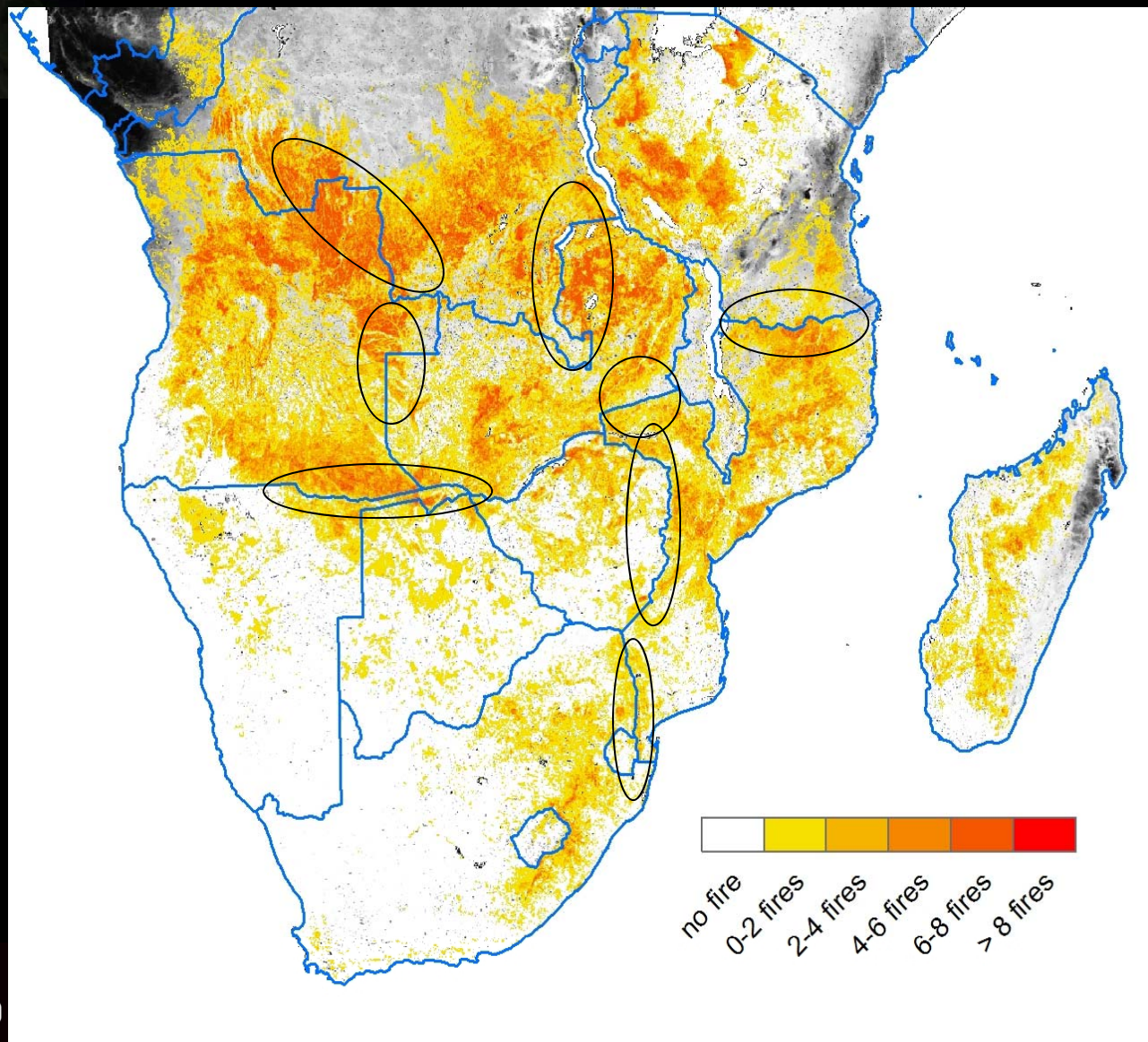


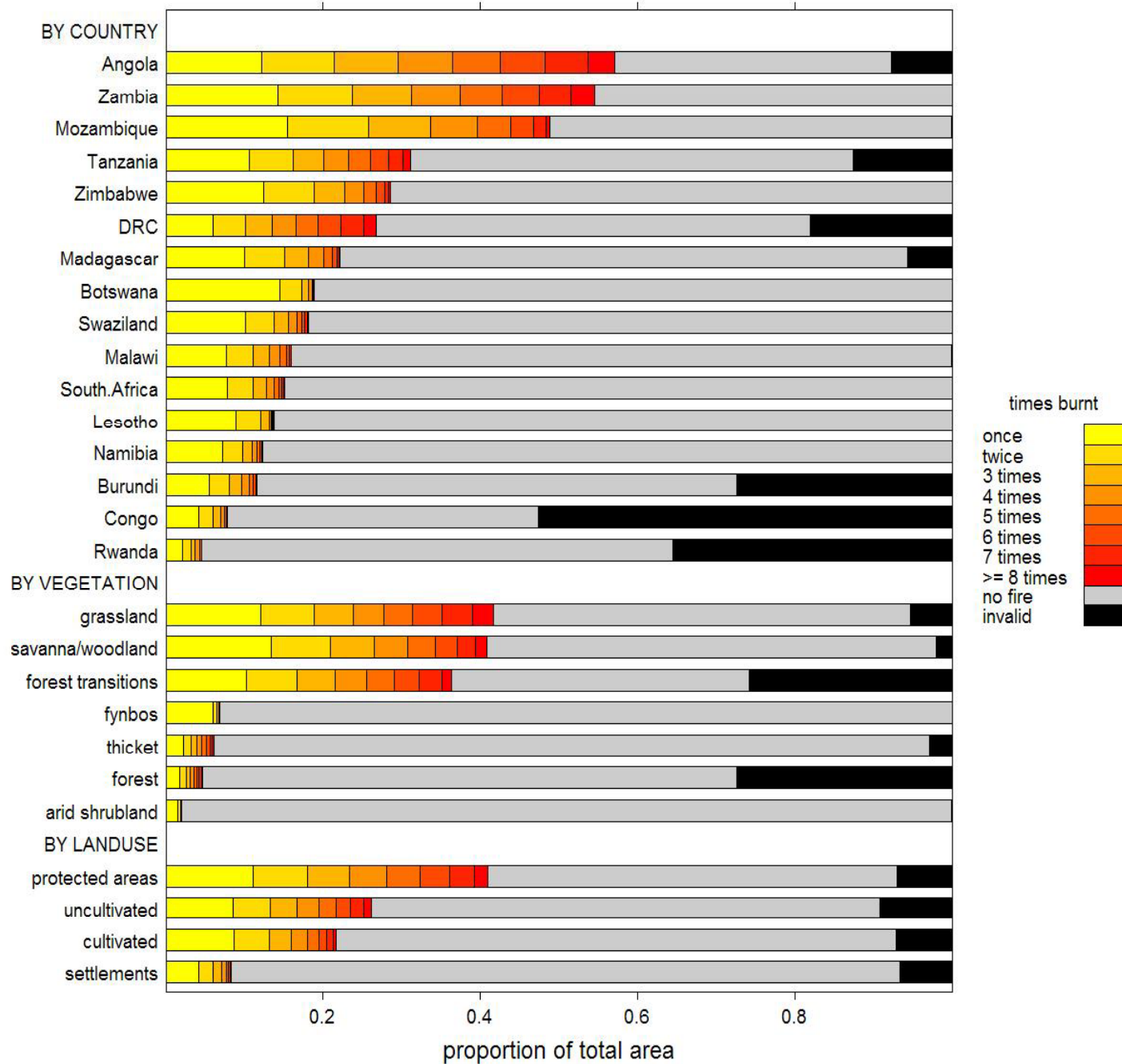
MODIS active fire data draped on top of vegetation for 2001

Acknowledgment:
Prof D Roy



MODIS Burned Area





Burned Area per country and per vegetation type

Acknowledgment:
Sally Archibald



Regional Fire Information

Development of the Advanced Fire Information System (AFIS) and AFIS field terminal

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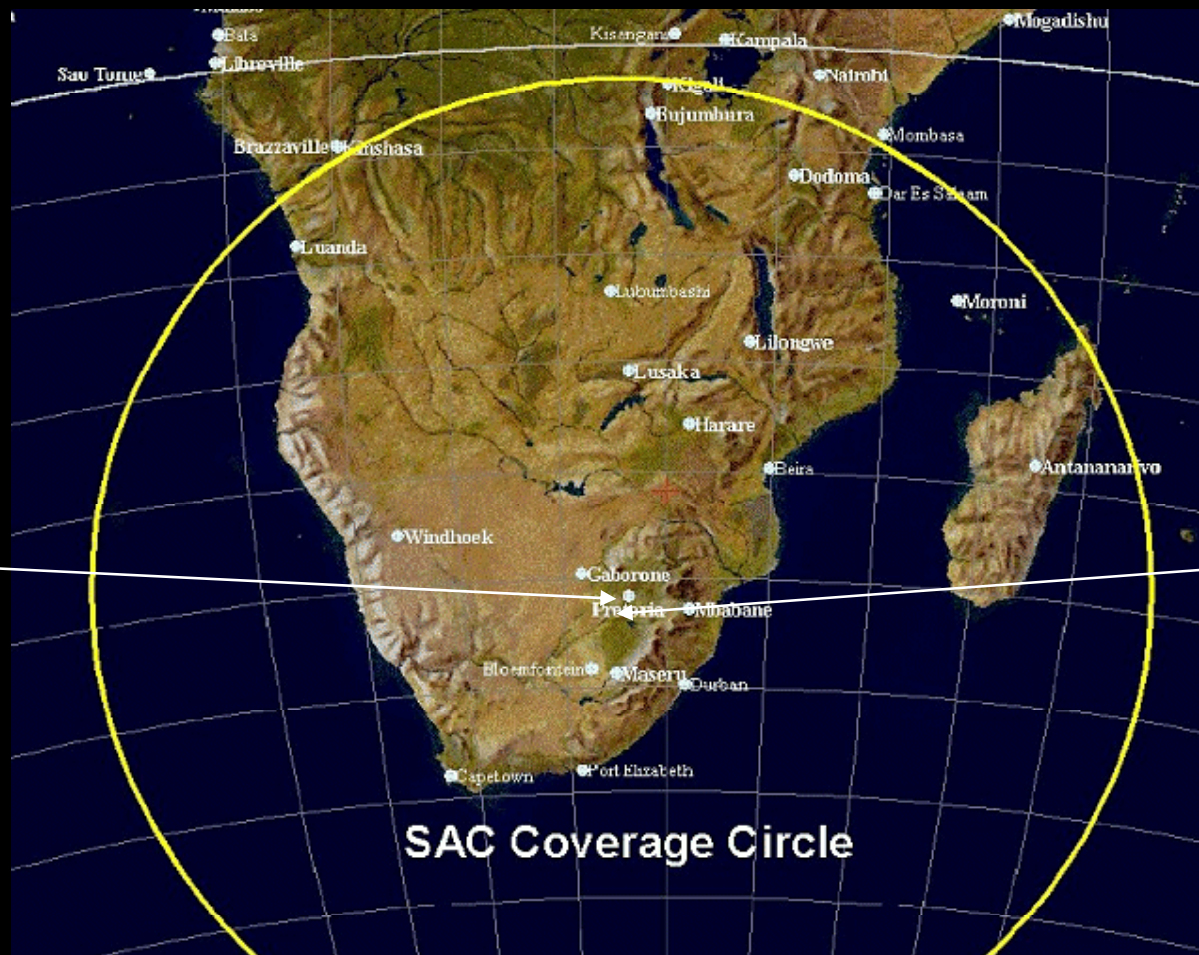
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2 x MODIS DB stations



2.1m MODIS DB station – CSIR campus Pretoria



12m MODIS DB station – CSIR SAC Hartbeeshoek

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Development of AFIS

CSIR and Eskom (power utility) started the development of the Advanced Fire Information System in 2004 in collaboration with the University of Maryland

Main aims:

Near real time fire detection

Burn Area mapping

Fire Danger prediction

Serve as a research tool as well as an alert service for fire suppression

Focus on Southern Africa

AFIS Sensor Web Fire Mapper

CSIR SAC

Internet Service
Provider (IS)

Public

Online
Mapping
Service

WAMIS
Server

Fire Alert
Services

Cell phone
Alert
Service

GEONETCAST
Service



MSG



MODIS



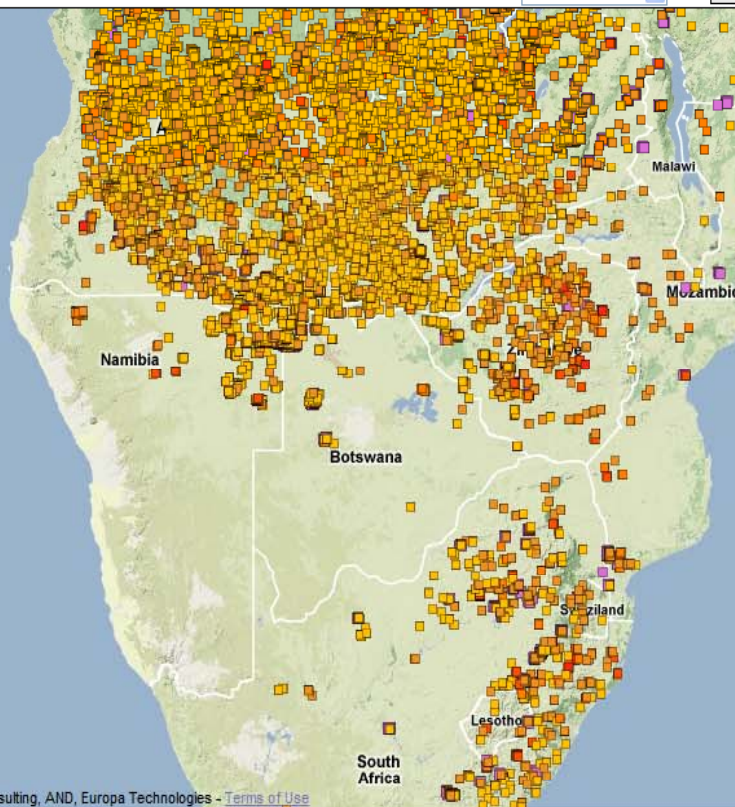
AFIS viewer



44.95605, -28.11075

Choose...

Lon:



POWERED BY
Google

Map data ©2009 LeadDog Consulting, AND, Europa Technologies - [Terms of Use](#)

Scale = 1 : 14M



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AFIS viewer includes:

Free access to all
MODIS active fires

MSG active fires every 15 min

MODIS BD burned area data

Automated weather stations

Fire Danger Predictions

False colour composites

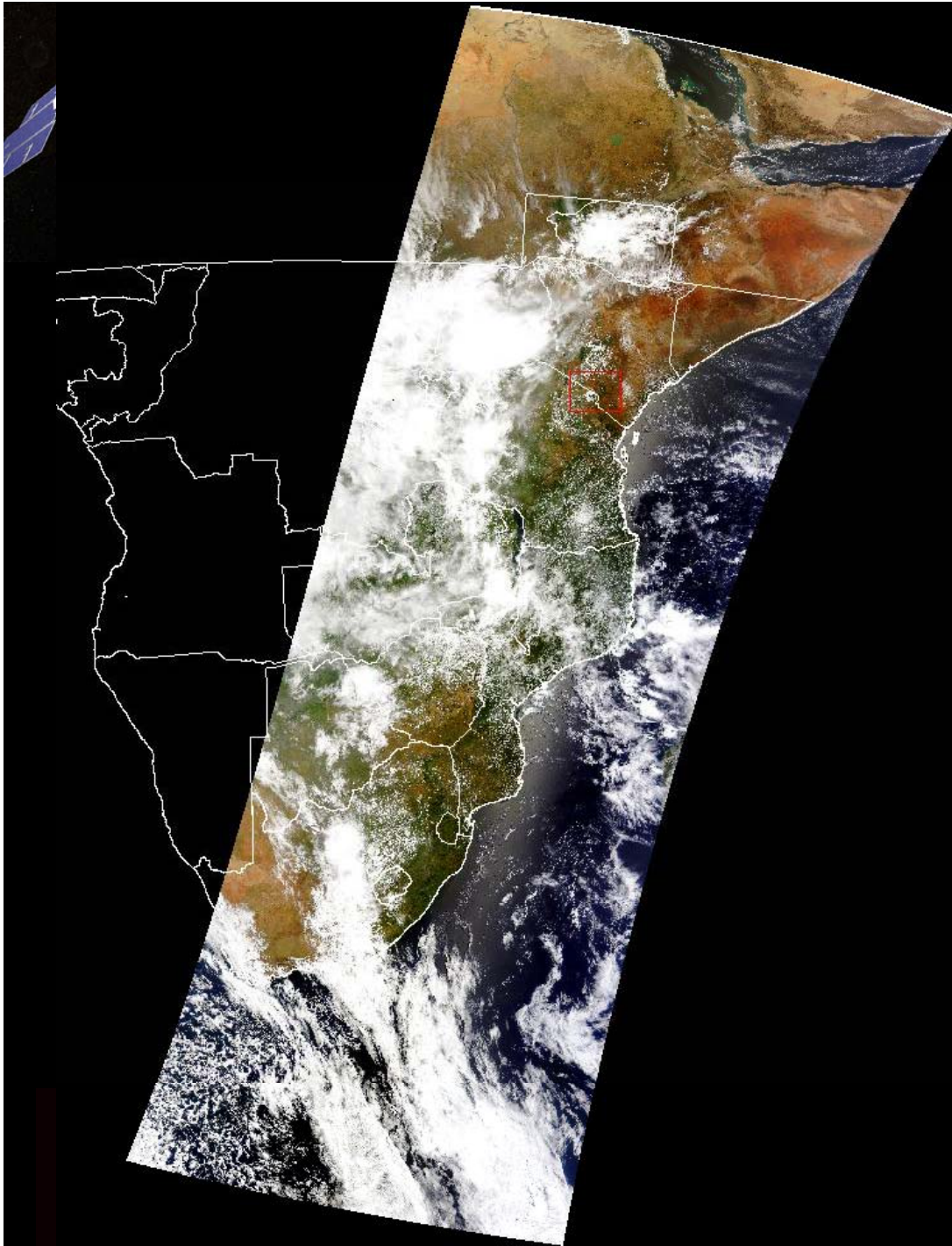


AFIS Africa

CSIR installed a
MODIS product
processing server in
Malindi Kenya in
February 2010

Nigeria will have an
operation MODIS
reception station by
May 2010

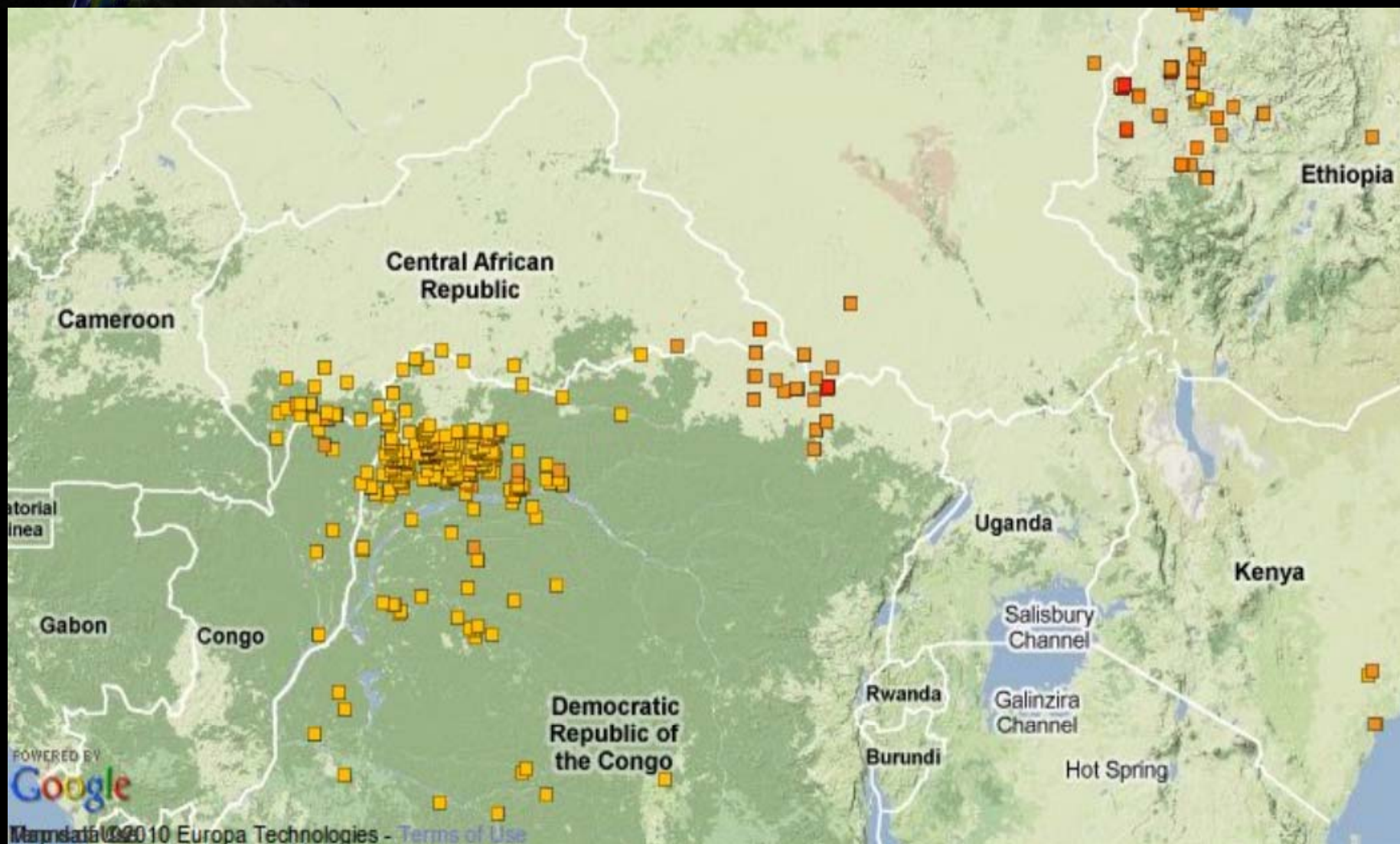




MODIS merged true
colour image from South
African and Kenya
stations
(20 February 2010)



MODIS active fires 24 March 2010





AFIS Field terminal

Due to slow, unreliable internet connections in Southern Africa the effectiveness of web based information systems are limited

The AFIS field terminal has been developed to eliminate the need for an internet connection by disseminating fire information via communication satellites (GEONETCAST) directly to the user.

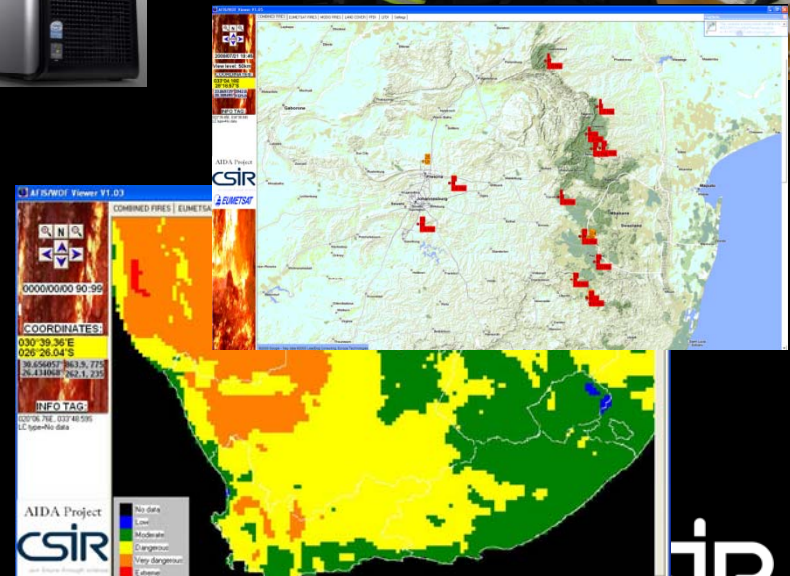
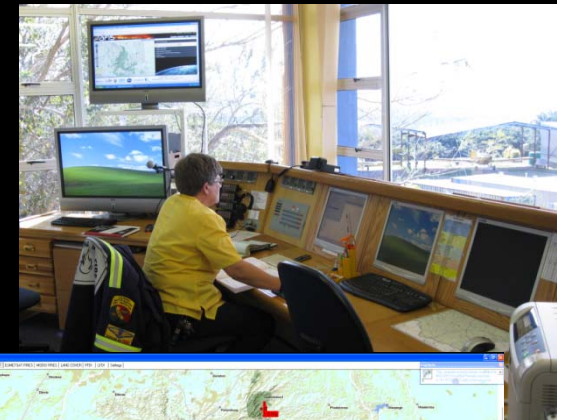
Infrastructure



2.1m C-Band



Eumetcast system

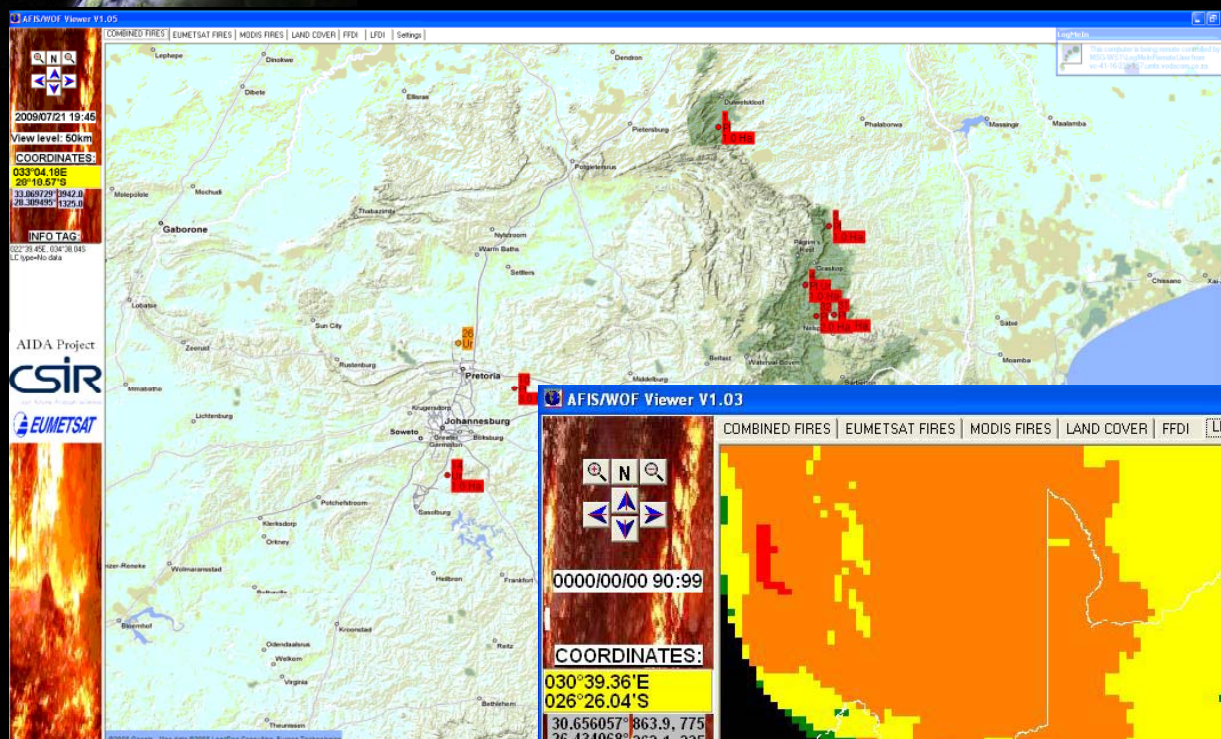


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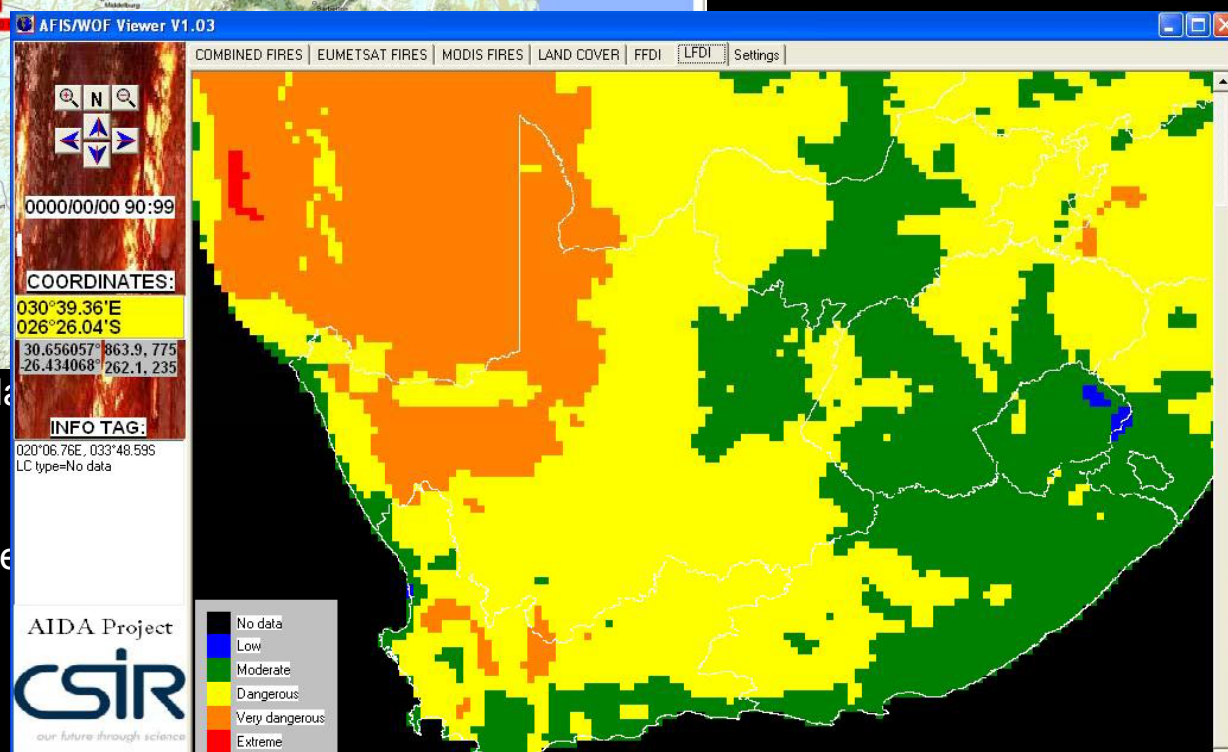
AFT products



Daily 250m geotiff file available

Weather animation

Animation of cloud movement



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Advantages

Operational fire information and dissemination system updated every 5 sec

Providing fire information without the need for an internet connection on the client side

Products can be viewed on screen or can be ported to another information system

System customised for each country or area of interest



AMESD project

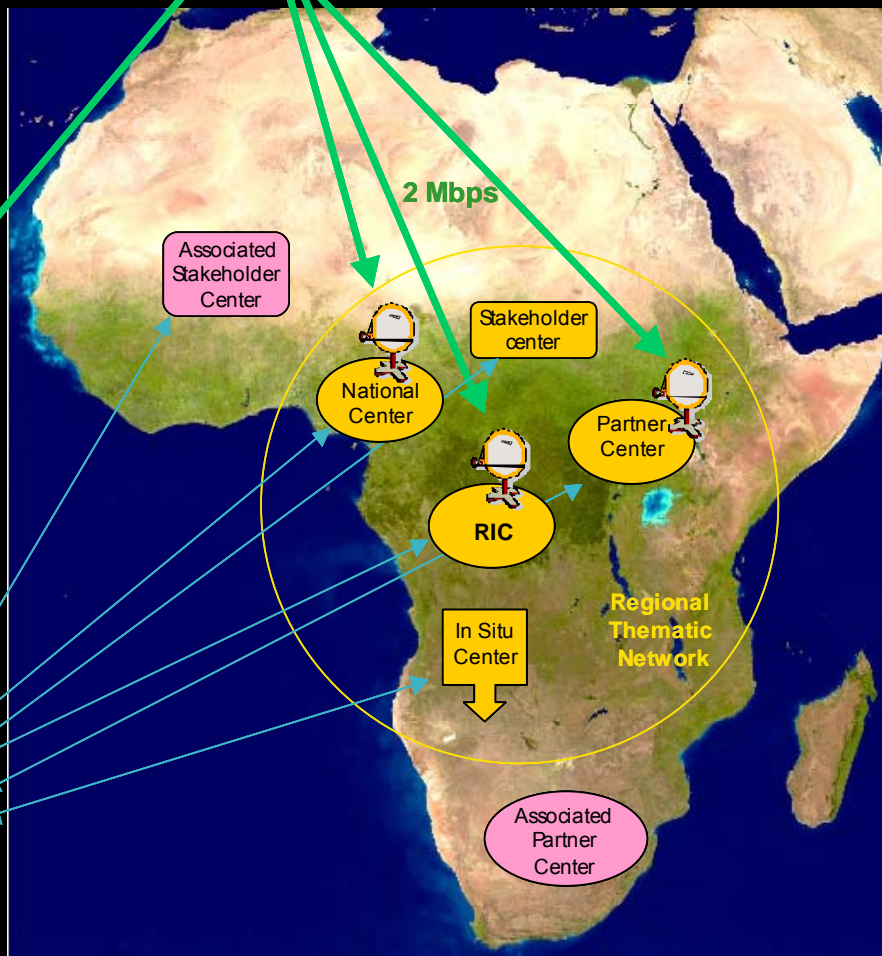
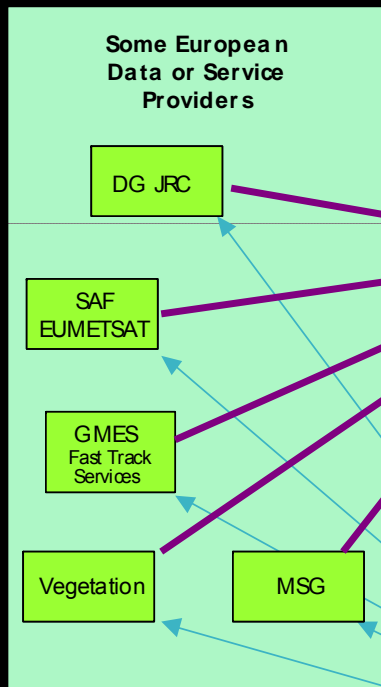
The African Monitoring of the Environment for sustainable Development (AMESD) project is an EU/AU initiative aimed at improving decision and policy-making processes for environmental management at national, regional and continental level in Africa, by facilitating the access to relevant EO information sources, and by increasing the overall information management capabilities

The SADC region will receive a Crop monitoring service, a Drought monitoring service and a Fire monitoring service distributed through GEONETCAST

The project will start in July 2010 and run till 2013

Each SADC country will receive 3 GEONETCAST stations installed at their Ministry of Environment, Ministry of Agriculture and fire service in 2010

The AFIS field terminal setup will be incorporated within the fire service provided by AMESD



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New developments

Register SAFNET as a NGO

Closer cooperation with other regional networks and organisations in Southern Africa

AFIS field terminals (Geonetcast) for each SADC country

Regional validation opportunities on new data sets distributed through field terminals