

Advanced Fire Information System (AFIS)

**CSIR Meraka
Earth Observation Science & ICT
EO Apps**

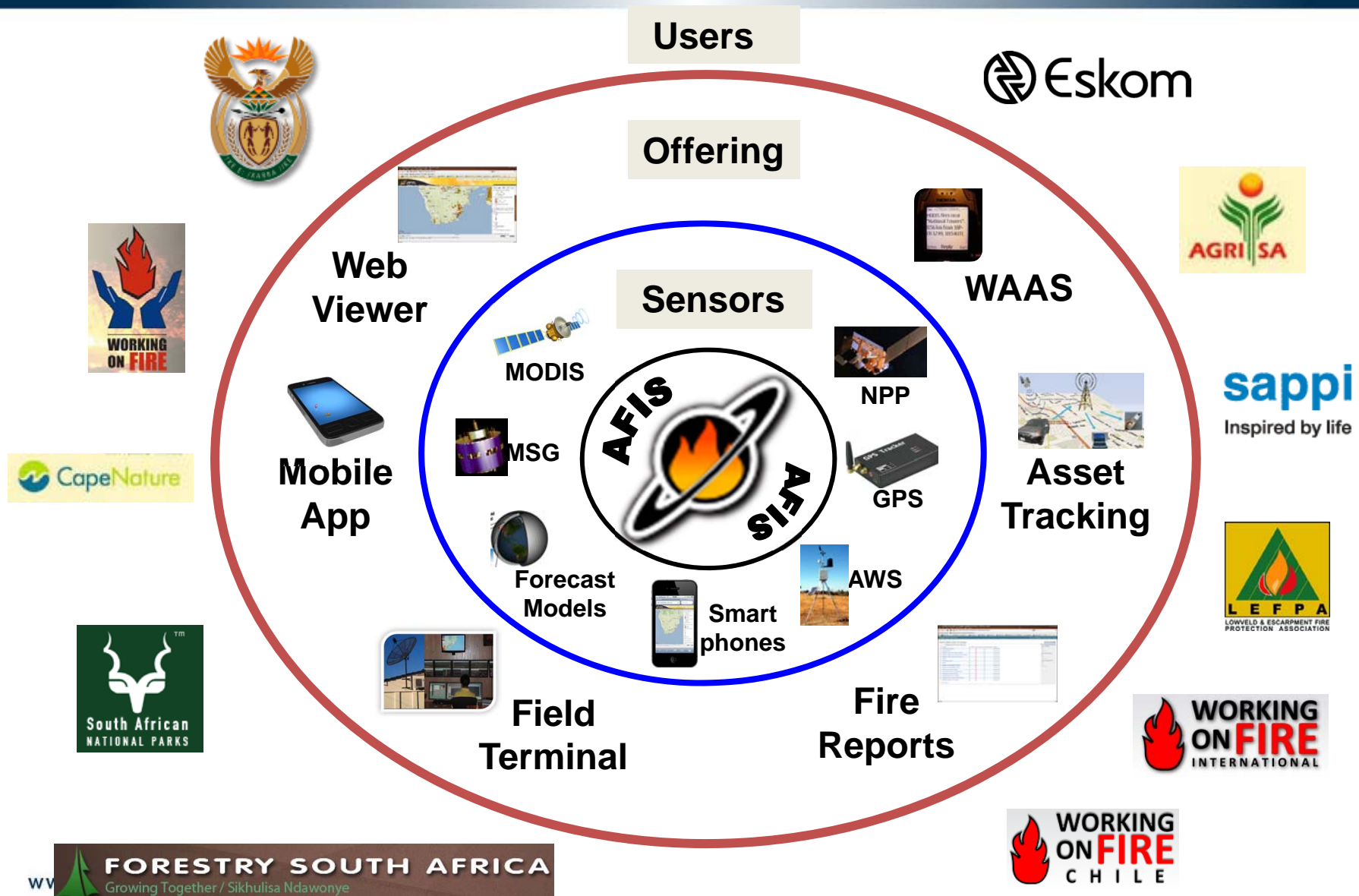
**GOFC-GOLD meeting
15 – 19 April 2013**

Value Statement

- The Advance Fire Information System (AFIS) is an integrated ICT solution developed by the CSIR to provide operational near real time information for the prevention, monitoring, management and assessment of wildfire as a risk or hazard to society on a local, regional and global scale.

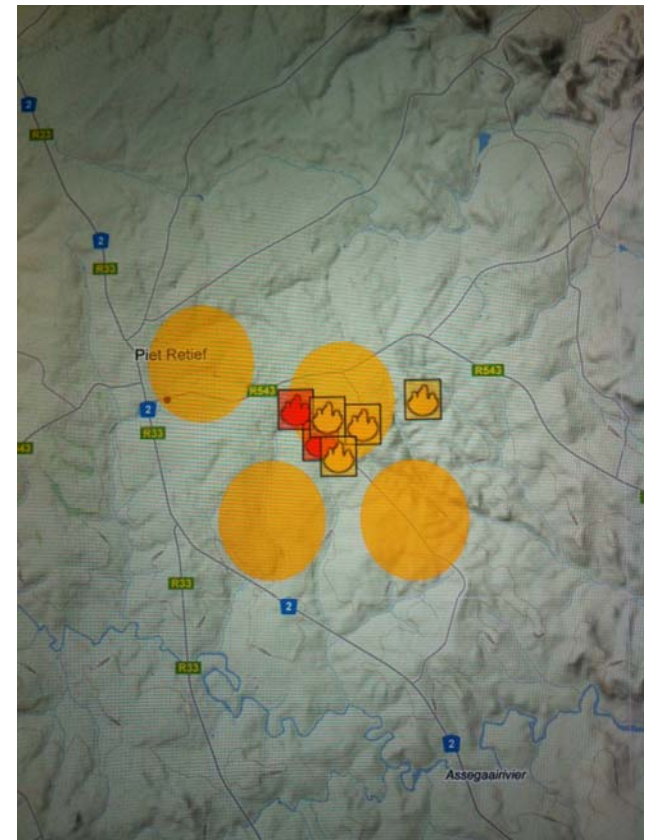


AFIS Portfolio of products and services



Fire detection code

- MODIS fire detection
MOD 14 - IMAPP DB processing
- NPP fire detection
IPOPP and CSPP code
- MSG fire detection
WF ABBA and Fire SAF (Wooster)

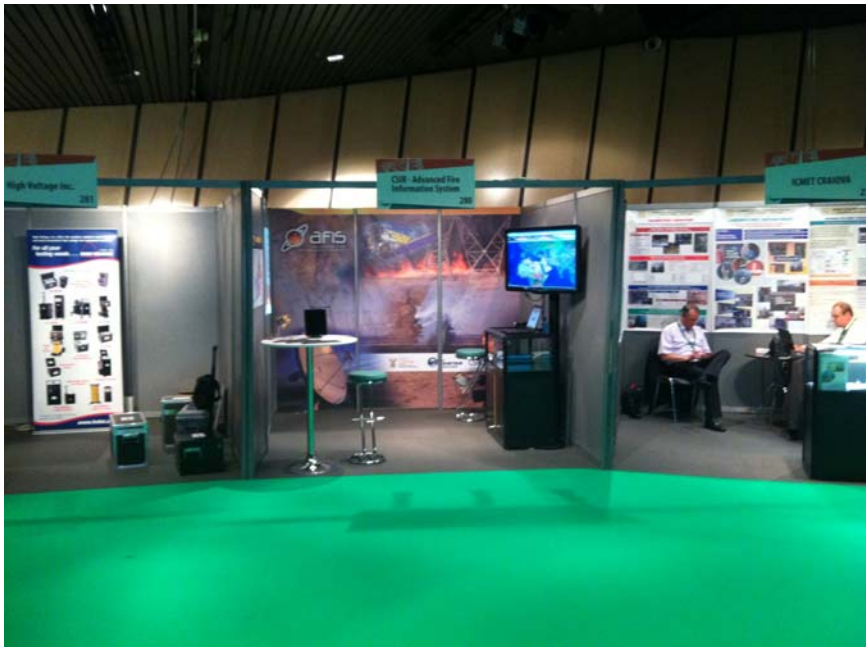


List of current AFIS users

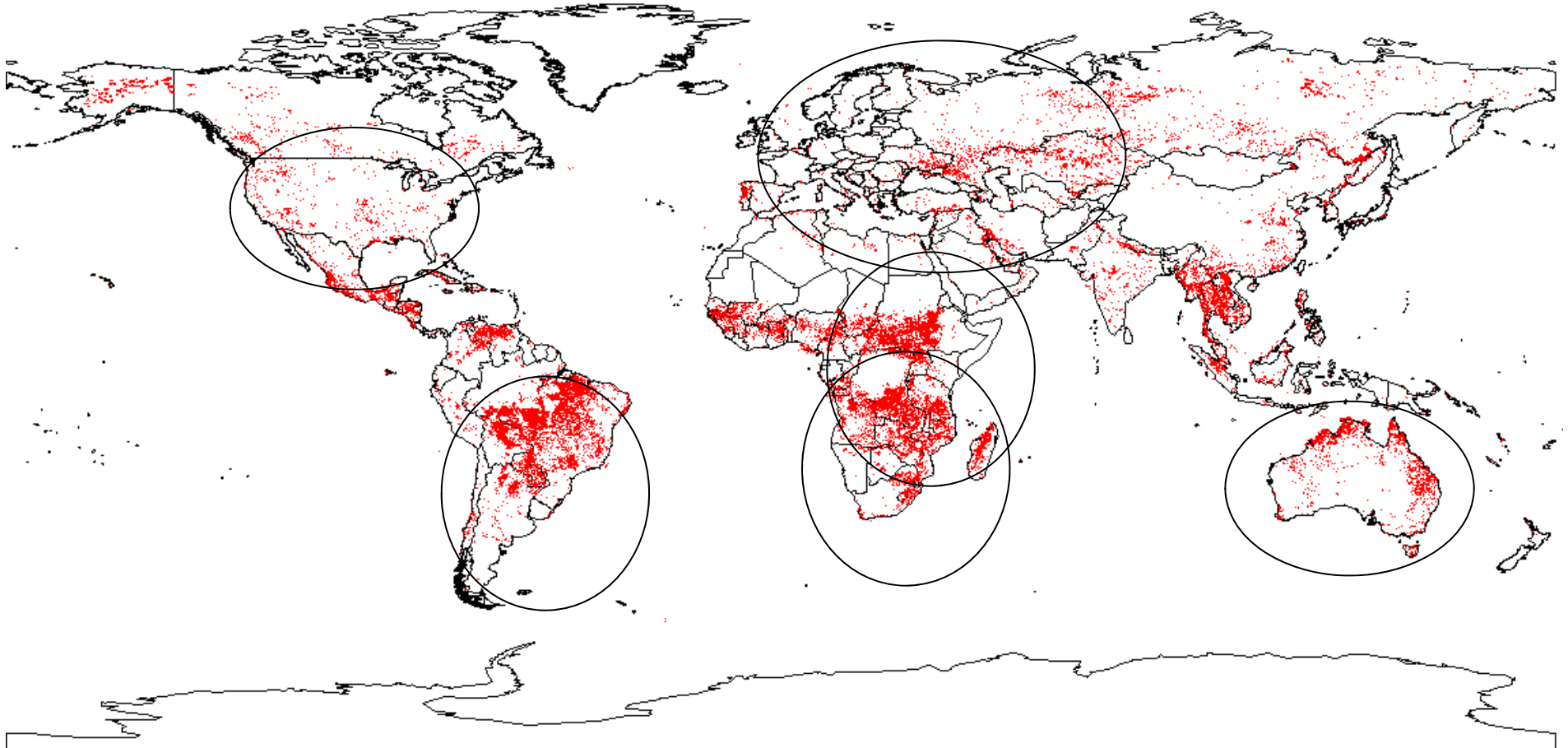
- Power companies (Eskom)
- Road Agencies
- Conservation agencies
- Community based programs (FPA's)
- Ministries of Environment
- Ministries of Forestry
- Ministries of Agriculture
- Regional fire networks

Global Market

- CIGRE World Power Utilities conference – Paris 2012

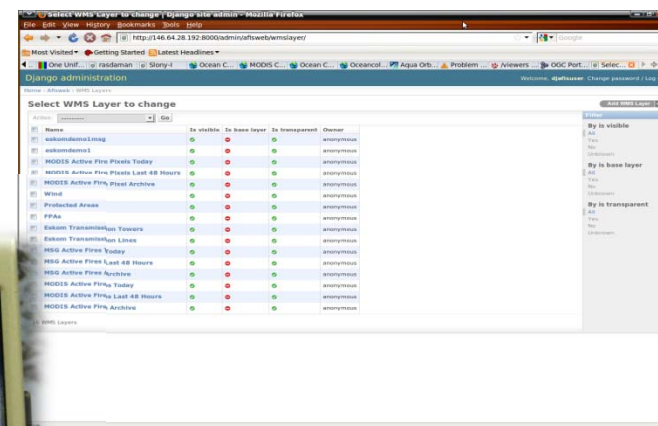
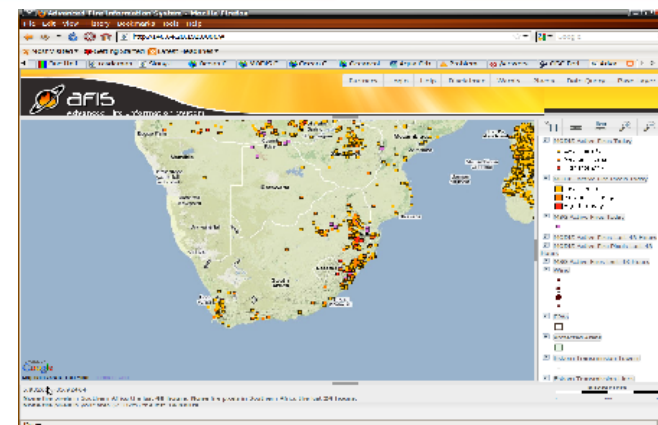


AFIS International Growth



Key Advanced Fire Information System (AFIS) features

- Near real time fire detection
- 12 years of historical fire information
- Cell phone and email alerting
- Daily 5 day FDI forecasts from ECMWF data - FWI and LFDI
- Fire Incident and permit reporting tool
- Integrated Fire information database combining satellite based info with incident observations
- Mobile AFIS app
- Field terminals in areas with no internet



Name	Is visible	Is base layer	Is transparent
satelliteimag	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
satelliteimag	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire Pixels Today	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire Pixels Last 48 Hours	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire, pixel Archive	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wind	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Protected Areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PPAs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ekurhuleni Transmission Towers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ekurhuleni Transmission Lines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MSG Active Fire Today	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MSG Active Fire Last 48 Hours	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MSG Active Fire Archive	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire Today	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire Last 48 Hours	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MODIS Active Fire Archive	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



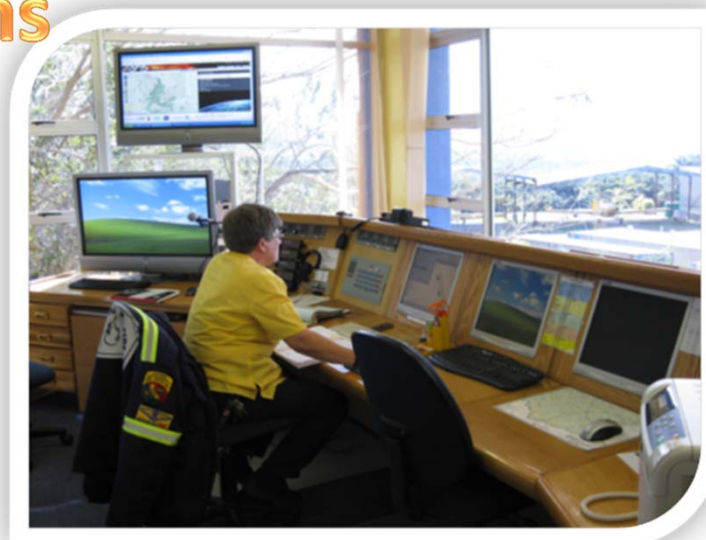
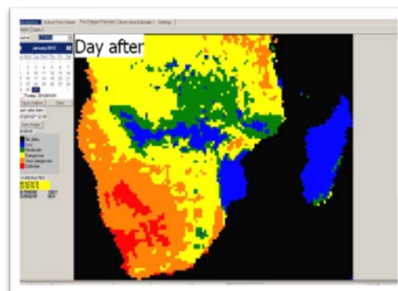
Development of the AFIS Field terminal

- Lack of reliable internet in Southern Africa limited the use of AFIS products regionally
- Two FP7 projects “Devcocast” and “AIDA” enabled the research in to the development of an internet independent AFIS field station
- The AFIS field terminal concept was developed under the FP7 projects and implemented under the AMESD project

AFIS field terminals - SADC

Field Terminals & Control rooms

AFIS field terminals have been installed at the Ministry of Environment for each SADC country providing them access to near real time MODIS active fire data without the need for an internet connection. Data is received through a low cost c-band communication system



Receiving Stations

AFIS Field terminal installations

	Country	City	Institution	Installation date
1	Botswana	Gaborone	Department of Meteorological Services	30/03/2011
2	Botswana	Gaborone	Ministry of Environment, Wildlife and Tourism	29/03/2011
3	Namibia	Windhoek	Ministry of Agriculture, Water and Forestry	05/04/2011
4	Namibia	Windhoek	Polytechnic of Namibia	06/04/2011
5	Mozambique	Maputo	Instituto Nacional de Gestão de Calamidades (INGC)	20/04/2011
6	Swaziland	Mbabane	Swaziland Environmental Authority	03/05/2011
7	Lesotho	Maseru	„Ministry of Tourism, Environment and Culture“	05/05/2011
8	South Africa	Pretoria	Department of Forestry	16/05/2011
9	Zimbabwe	Harare	University of Zimbabwe	22/06/2011
10	Zimbabwe	Harare	Environmental Management Agency	23/06/2011
11	Zimbabwe	Harare	Scientific and Industrial Research and Development Centre	24/06/2011
12	Zambia	Lusaka	Environmental Council of Zambia,	27/06/2011
13	Malawi	Lilongwe	Department of Forestry	12/07/2011
14	Tanzania	Dar Es Salaam	Ministry of Natural Resources and Tourism	28/07/2011
15	Botswana	Gaborone	University of Botswana	15/09/2011
16	Angola	Luanda	Ministry of the Interior	30/11/2011
17	Namibia	Windhoek	Etosha Ecological Institute	06/02/2012



AMESD Fire station in Malawi



AMESD Fire station in Zimbabwe (UZ)

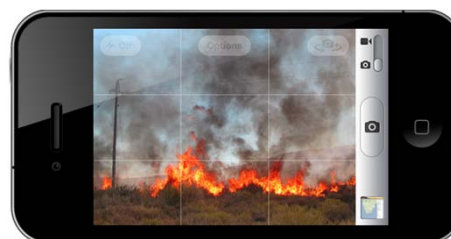
AFIS Field terminal products

- MODIS active fire data (Near real time)
- MODIS burned area data (Monthly)
- MODIS True/False colour composites (Daily)
- MSG ABBA active fire data (Every 15 min)
- Canadian Fire Weather Index (3 day forecast)
- Lowveld Fire Danger Index (3 day forecast)

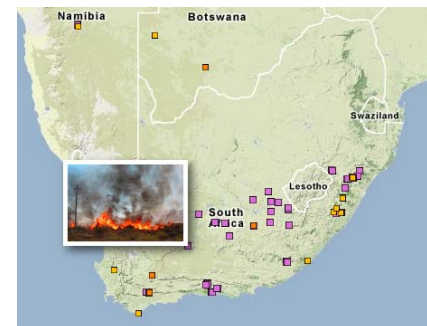
AFIS mobile app – South Africa

Mobile Reporting apps

- MODIS fires close to my location
- 5 days fire danger forecast for specified city or current location.
- Fire alerts pushed to mobile device
- Fire report (date since last burn, curing, fire frequency, etc.) at current location.
- Upload geotagged photos to AFIS viewer.



iOS
Android



CSIR
our future through science