Advanced Fire Information System (AFIS)

CSIR Meraka
Earth Observation Science & ICT
EO Apps

GOFC-GOLD meeitng
15 – 19 April 2013
• 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

Users

Offering

Eskom

Web Viewer

Sensors

WAAS

MODIS

Asset Tracking

MSG

NPP

Forecast Models

GPS

Smartphones

AWS

Field Terminal

Fire Reports

CapeNature

Mobile App

South African National Parks

Fire on FIRE International

FORESTRY SOUTH AFRICA
Growing Together / Sikhulisa Ndawonye
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
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 into 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 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

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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.

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