

TIDES

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DARPA / SPAWAR / ESC

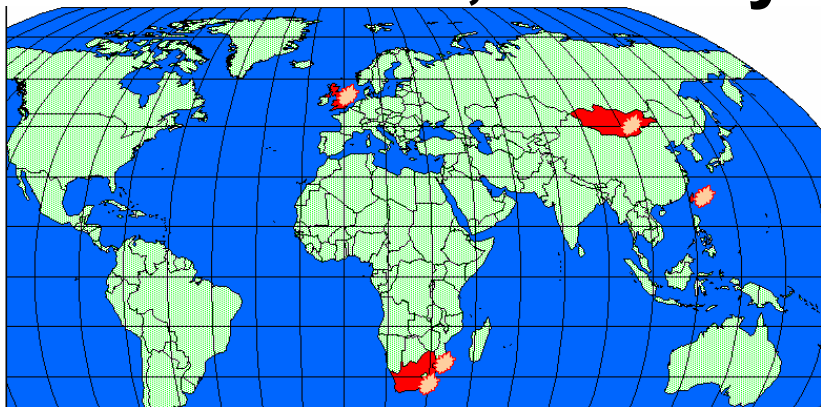


Problem

- **Provide analysts with on-demand access to info vital to national security**
 - **Domain:** infectious disease outbreaks and humanitarian disaster relief
 - **News capture:** current, global, multi-lingual
 - **Value added:** translation, extraction, detection, summarization, filtering, visualization

Background

- Expanded trade & travel have increased economic & political impacts of major disease outbreaks and humanitarian disasters
- Bio terrorism has become very real threat
- Appropriate response depends on reliable and up-to-date info, from many news sources worldwide, in many languages



Objective

- **Deliver information on demand**

- **In real time, 24x7**
- **From global sources** (epidemiological reports, newswire, email, online news)
- **In multiple languages** (English, Spanish, French, Chinese, German, Russian, Italian, Portuguese)
- **For real problems** (infectious disease outbreaks, humanitarian disaster relief)
- **To real users** (analysts, medical experts, humanitarian/disaster relief organizations)

Activities

- **IFE-Bio:** Integrated Feasibility Expt for Bio-Security
 - **MiTAP:** MITRE Text and Audio Processing prototype being used 24x7
 - **Evaluation:** user-centered, info extraction, machine translation
 - **Normalization** of temporal, geospatial and name information

- Architecture
 - **Catalyst:** framework to support plug & play language processing systems
 - **Unified TAP architecture** to support interoperability of TIDES systems

MiTAP: MITRE Text and Audio Processing

Translingual
Information
Detection
Extraction
Summarization

90+ sources,
4K msgs/day

capture

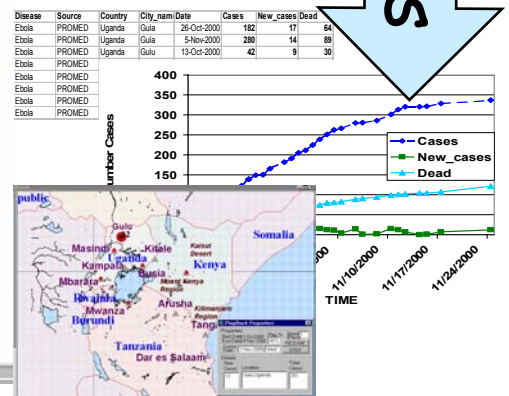
8 languages,
w/ automated
translation

Binned into newsgroups
for disease, region,
person, source, language

search

browsing

analysis



Entity tagging,
Summaries,
Search, Q&A*,
Visualization*

* Available FY02

The screenshot shows an email client window titled "epidem-news.pr". The interface includes a "Folders" pane on the left, a list of email messages in the center, and a detailed view of a selected message at the bottom. Annotations in blue boxes with arrows point to specific features:

- Top-left annotation:** "categorized by language, disease, source, org, person, region" points to the "Folders" pane.
- Top-right annotation:** "Generated subjects indicate disease, region, & victims for easy browsing & sorting" points to the subject lines of the email list.
- Bottom-left annotation:** "alerts to new msgs" points to the "newswire.fbis (32448)" folder.
- Bottom-right annotation:** "cross-posted to relevant newsgroups" points to the "Subject" field of the selected email.
- Bottom-center annotation:** "color-coded named entities" points to the text "John Kwon" and "John Otolany" in the email body.

	From	Sent
	ed_gn@linus.mitre.org	1/5/2002 2:07 PM
	promed . promed-pro...	1/5/2002 7:50 PM
	promed . ProMED-mail	1/5/2002 7:51 PM
	promed . ProMED-mail	1/5/2002 7:59 PM
	promed . ProMED-mail	1/6/2002 10:08 AM
	promed . ProMED-mail	1/6/2002 10:19 AM
	promed . ProMED-mail	1/6/2002 10:26 AM
	promed . ProMED-mail	1/6/2002 6:21 PM
	promed . ProMED-mail	1/6/2002 6:21 PM
	promed . ProMED-mail	1/6/2002 6:35 PM
		7/2002 4:04 AM
		7/2002 4:05 AM
		7/2002 10:06 PM
		7/2002 10:22 PM
		7/2002 10:27 PM
		7/2002 10:31 PM

From: promed . ProMED-mail **To:** general,epidem-news,epidem-news.promed,disease.ebola,disease.hemorrhagic-fever,r...
Subject: EBOLA . GABON . victims . PRO/AH/EDR) Ebola hemorrhagic fever - Gabon, Congo Rep (05)
From: John Kwon (jtk81@hotmail.com)
Subject: The New York Times, Associated Press Report, Mon 7 Jan 2002 [edited]
<http://www.nytimes.com/aponline/international/AP-Ebolas-Return.html>

Ebola Returns to Ogooue Ivindo

MEKAMBO (Gabon): In a shaded jungle clearing, John Otolany watched grimly as ghost-like men in white protective clothing lowered a small body into the ground and sprayed the grave with disinfectant. Otolany's 5-year-old nephew was the fifth member of his family to die of the **Ebola disease**. His eldest son died 2 days later.

Impacts

- **Playing key role in tech transfer from research community to DOD**
 - **MiTAP: integrating technology for capture and browsing of world wide news sources**
 - **TIDES World Press Update distributed to decision-makers with DOD & government**
- **Providing user-centered evaluation paradigm**
- **Leading unified architecture to integrate research from MITRE, BBN, Virage**
- **Creating new annotation and evaluation standards for name translation and extraction of temporal & geospatial information**

Future Plans



- Multi-document summarization (with Columbia)
- Incorporation of new TIDES machine translation modules (e.g., for Arabic, Chinese)
- Integrated architecture supporting speech, broadcast news and text (with BBN, Virage)
- Enhanced geospatial visualization of events
- Replication and tailoring of MITAP capabilities to sponsor environments

