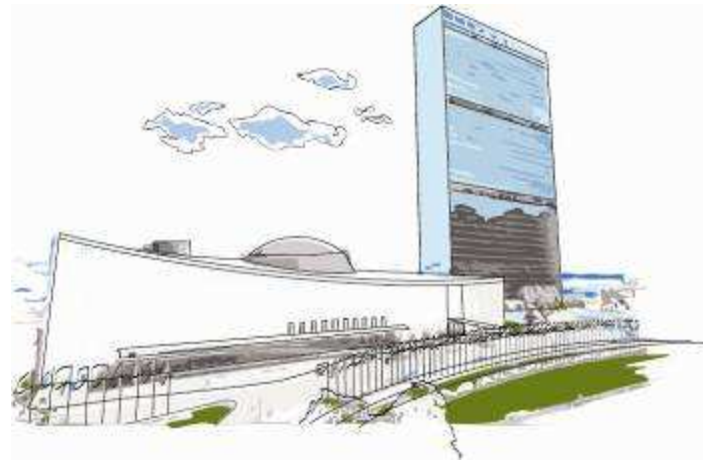


# Geo-information for UN Operations

## 10<sup>th</sup> UN Conference on the Standardization of Geographical Names



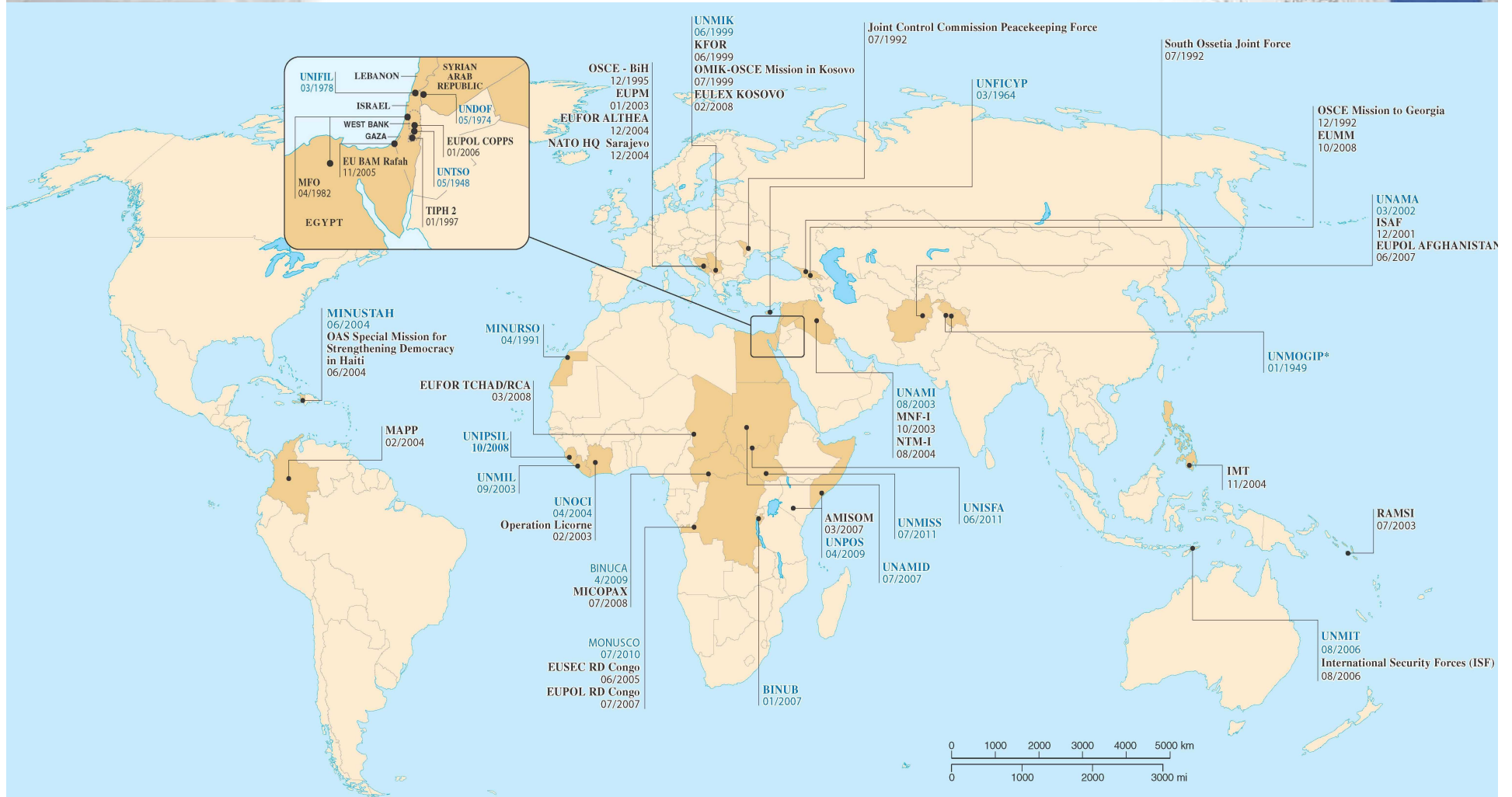
**Cartographic Section  
Department of Field Support  
United Nations**



# Agenda

- **UN Peace Operations**
- **UN Cartographic Section (UNCS)**
- **Geo-information requirements for UN operations**
- **Current Challenges**
- **UNCS' support framework and capacity building**
- **Questions & Answers**

# Global Peace Operations




# Cartographic Section

**Cartographic Section** provides geospatial information support to the full range of United Nations operations

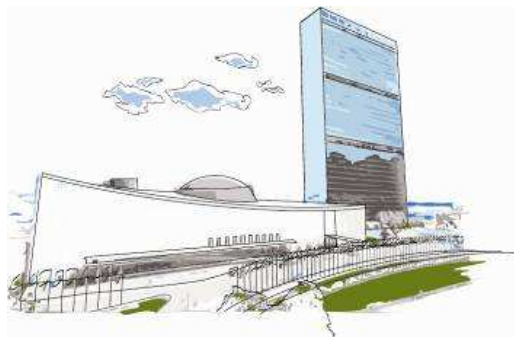

## Principal duties include:

- ⇒ Provide accurate and timely geospatial information in support of the decision-making and operational needs of
  - . The Security Council
  - . UN Secretariat
  - . UN Peace Operations (DPKO, DPA, DFS)
- ⇒ Program management of field mission GIS operations
- ⇒ Provide technical assistance on international boundary issues





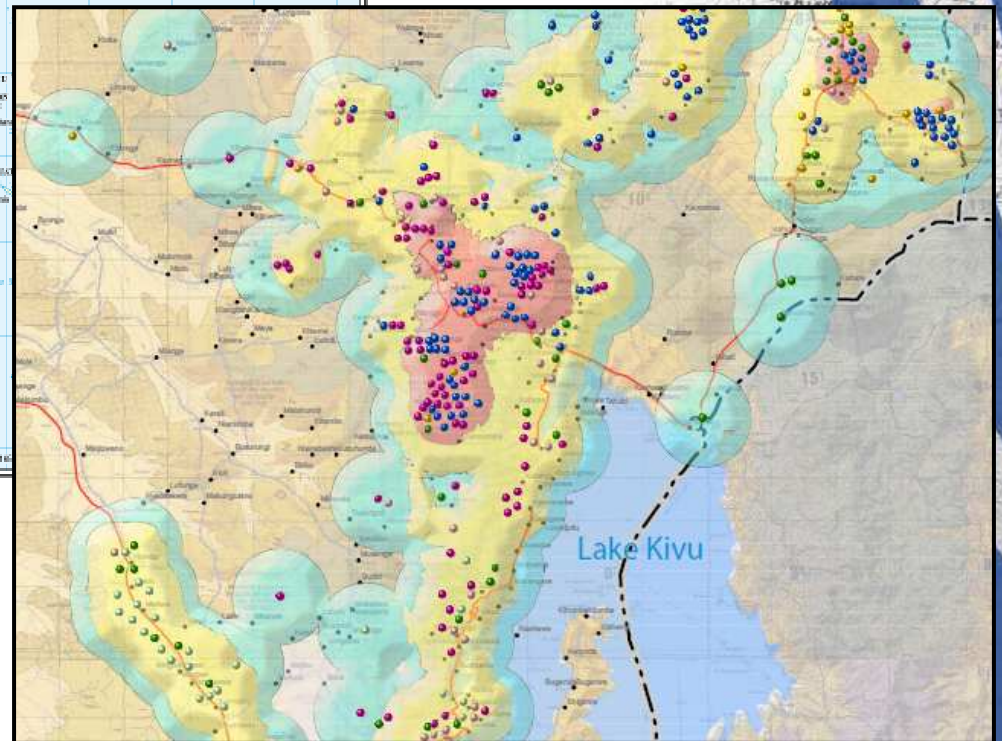
# Geo-information Requirements for UN Operations







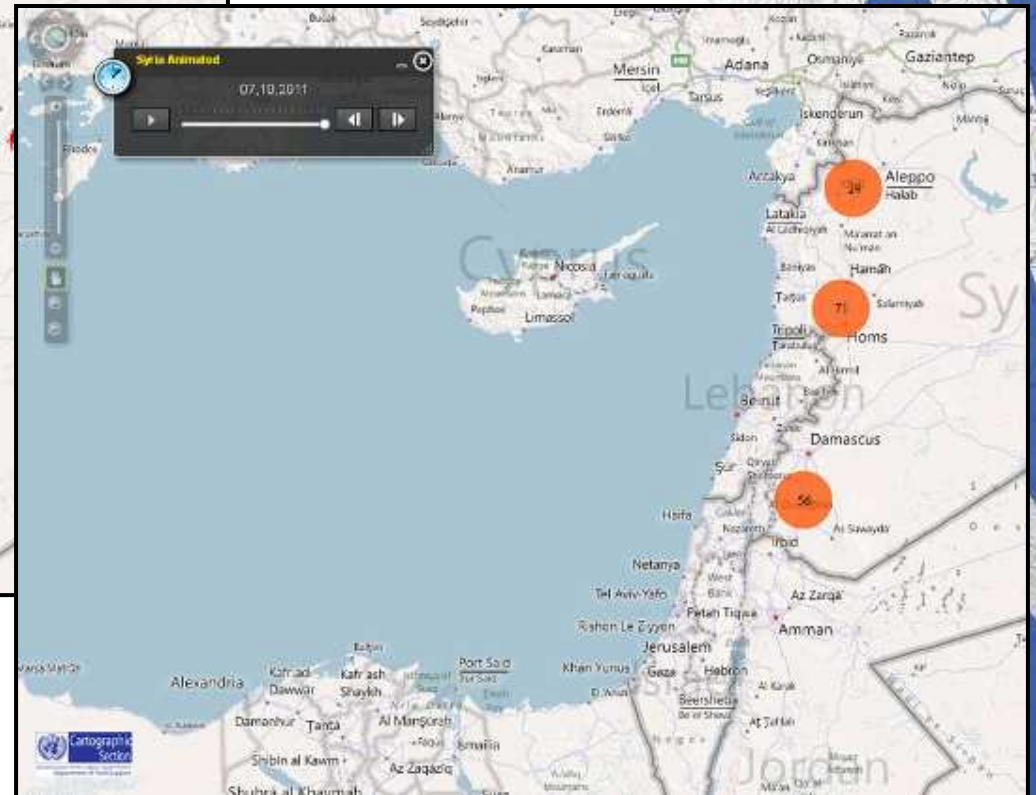
# UN Secretariat



- Map production for UN Secretariat in UNHQ and Offices out side of UNHQ
- Geospatial analysis for specific demands



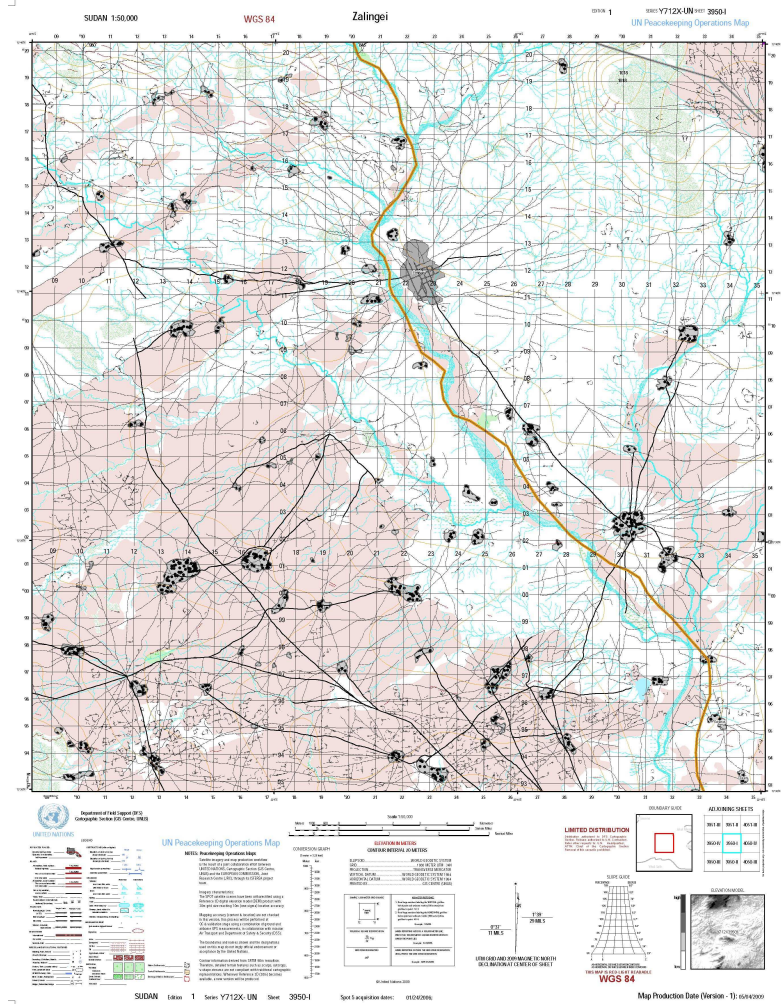
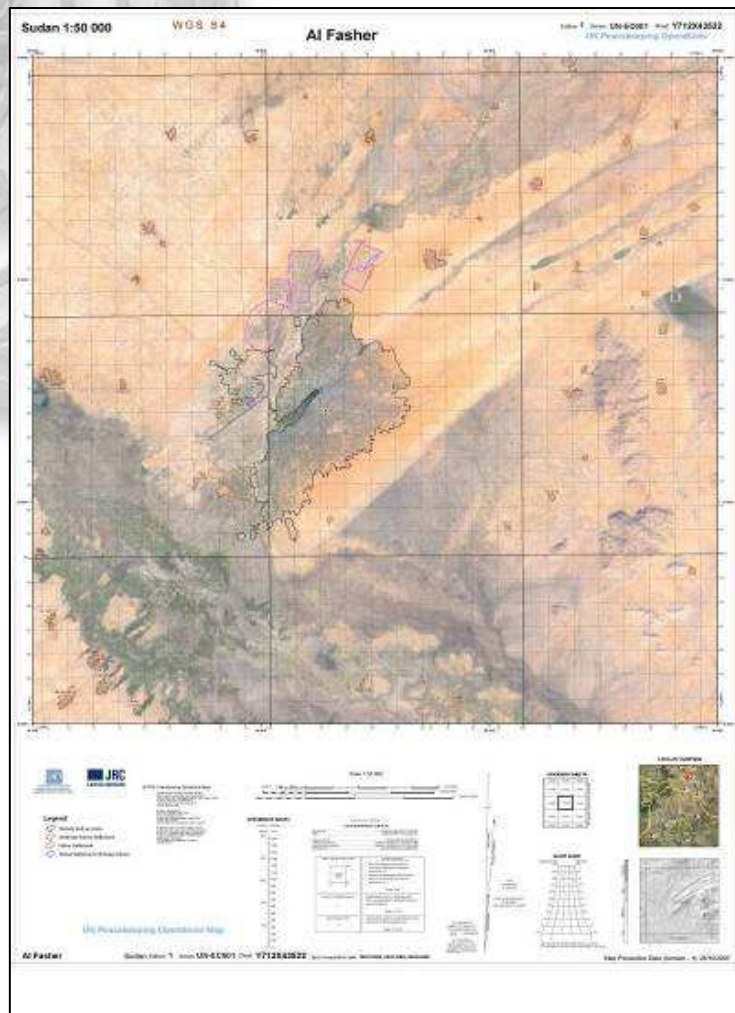
# UN Secretariat



- **Web-Map services for pattern analysis, etc**

# UN Field Operations

## Mapping & Geo-Databases



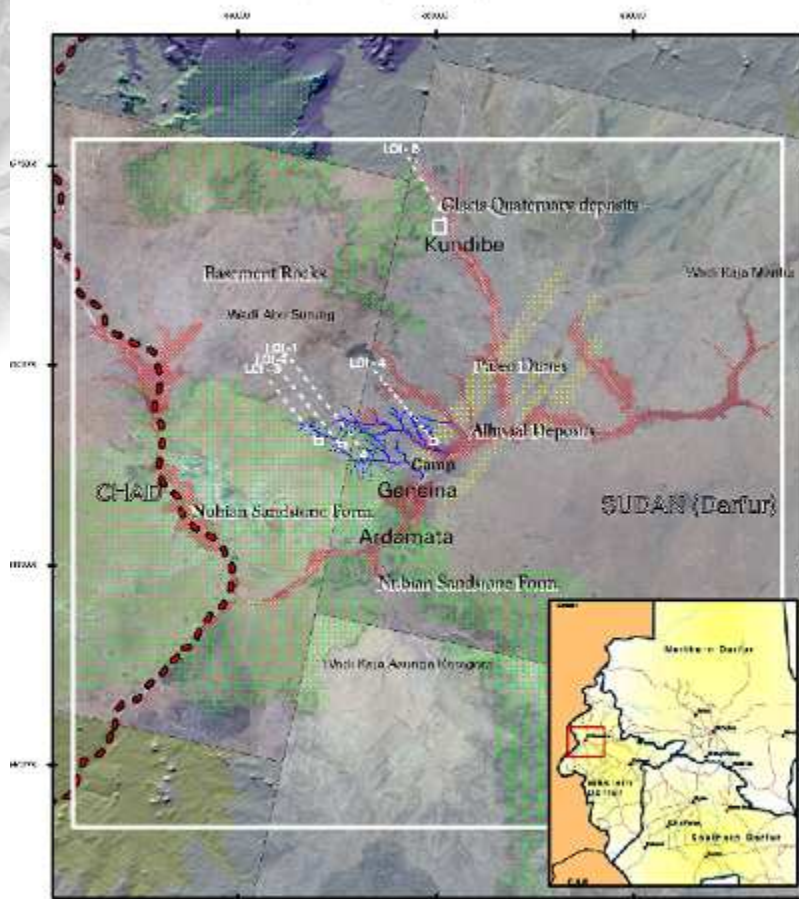
# UN Field Operations

## Underground Water Exploration

### GROUNDWATER STUDY: SELECTION OF LOI's FOR SURVEYS & DRILLING

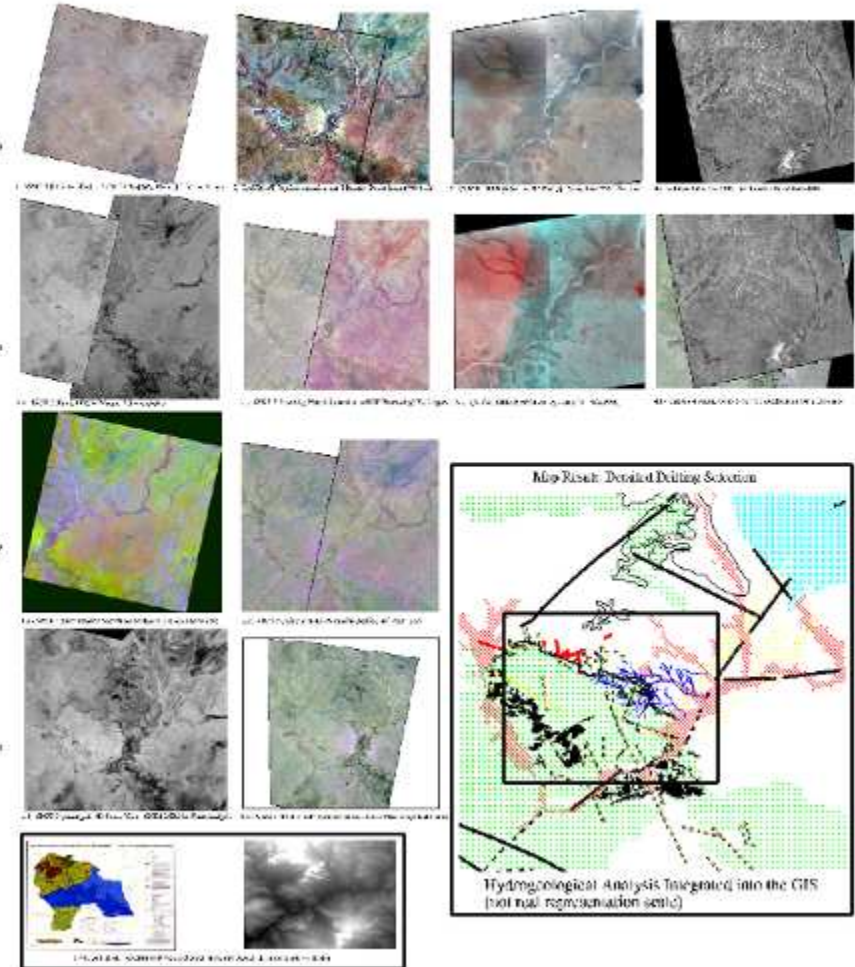
DocId: 34110-0701CNDPKU  
 14 items, application: Location, 2007  
 15/11/2007 09:56:00

#### AL -GENEINA, Darfur (SUDAN): AREA OVERVIEW



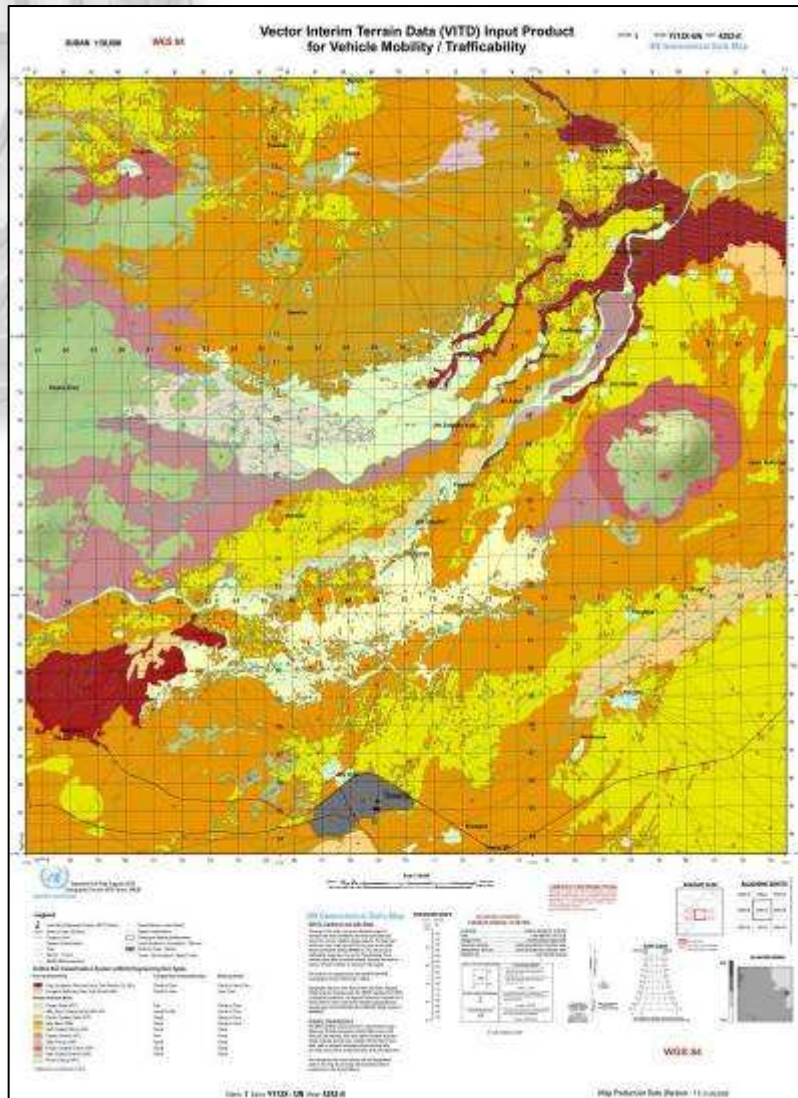
Spoc-5 Satellite data and preliminary geological analysis  
 LOIs (Locations of Interest) for groundwater drilling

#### GIS and SATELLITE DATA : Data Sources and Processing Workflows

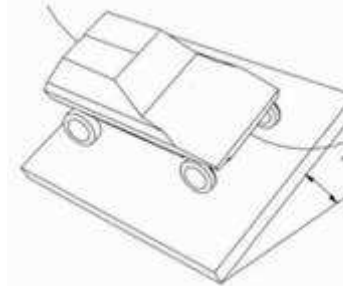


# UN Field Operations

## Terrain Analysis for Trafficability

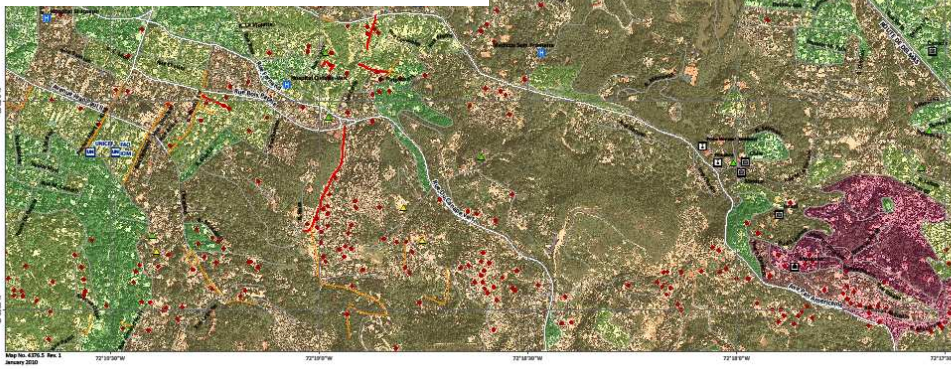
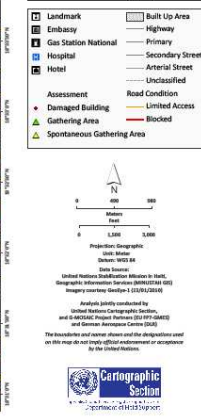
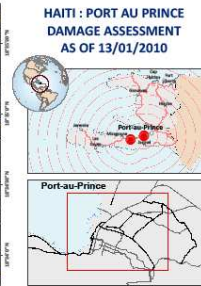
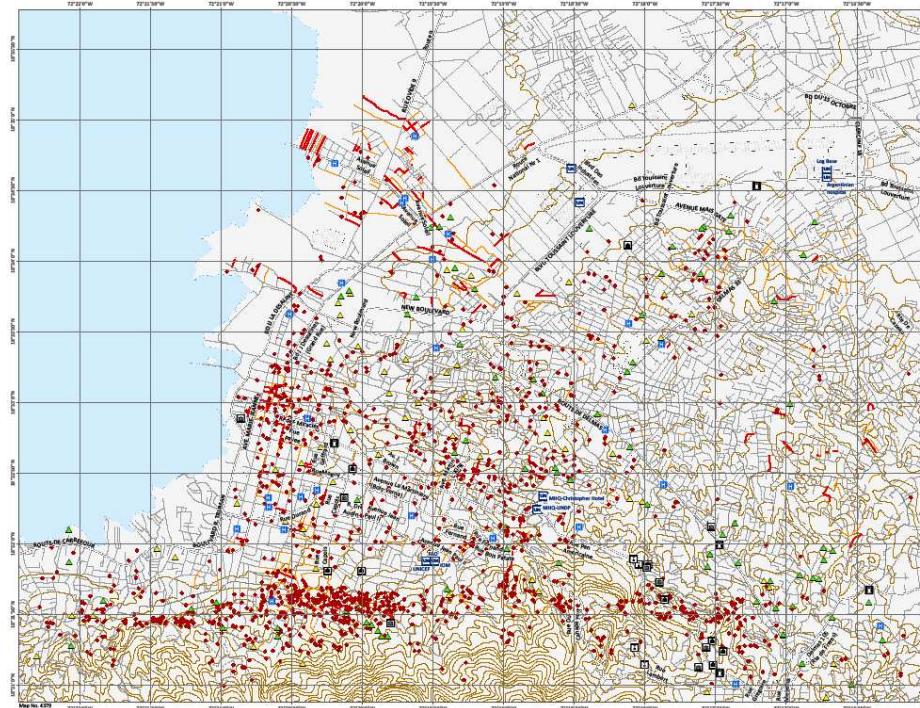


### Trafficability Analysis



# UN Field Operations

## Geo Analysis for Damage Assessment in Haiti



# UN Field Operations

## Web-mapping for Haiti Earthquake



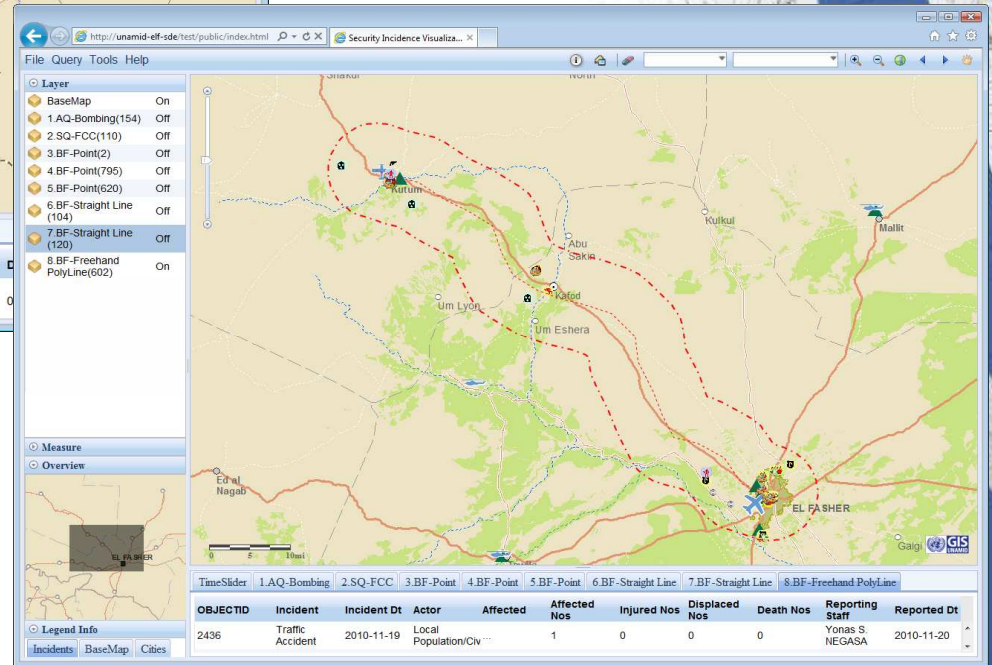
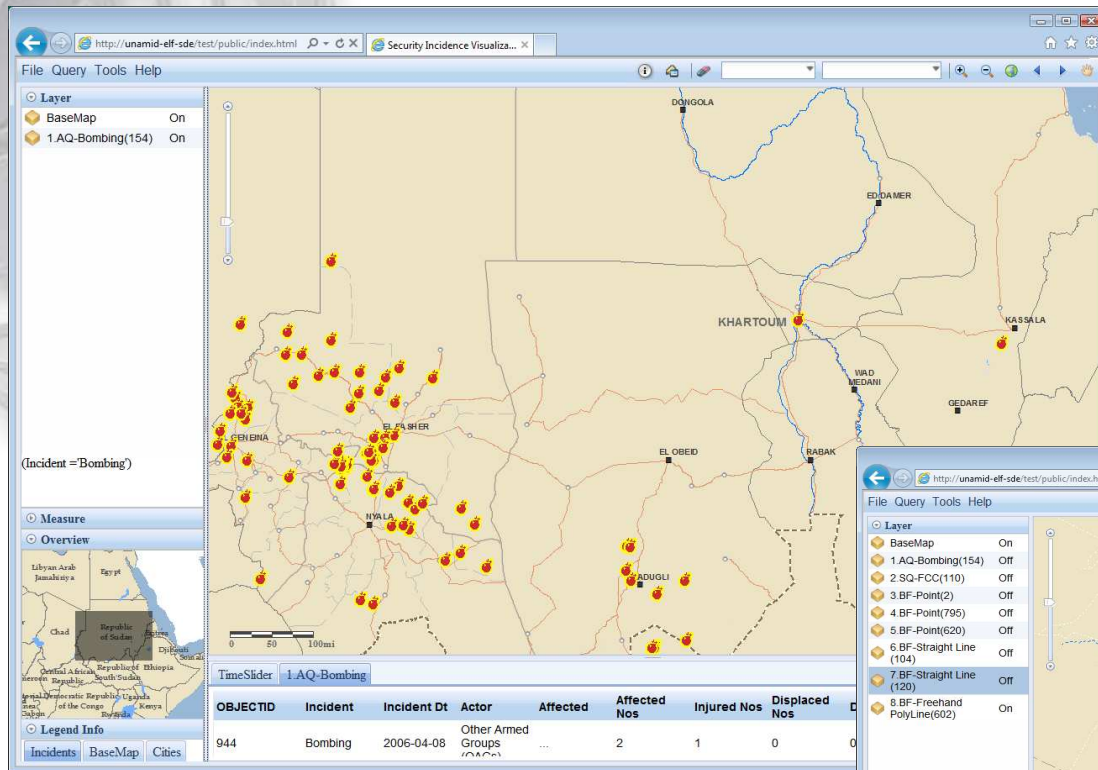
# UN Field Operations

## Web-mapping for Security Warden (UNIFIL)

Address	Guesthouse ID	Mobile	Call Sign	Location	Section	Warden	Recruit	Blood	Warden Name	Type	Photo	Emergency	GlobalID
13st Wazir Akbar Khan, next to UNHCR Guesthouse	NA	700182734	HQ 41	Kabul	SRSG Political	*	I	A+	Zulfiqar Bhat	I			{EE694A3C-E5B9-4C6B-A9A0-304EF092E71}
13st Wazir Akbar Khan, next to UNHCR Guesthouse	NA	700093844	HQ 225	Kabul	Field Support	Amir	I	A+	Zulfiqar Bhat	I			{7663B5EA-425E-4B17-B0A8-F33A2F99AFA}
13st Wazir Akbar Khan, next to UNHCR	NA	799772577	HQ	Kabul	Human	*	I	G+	Zulfiqar Bhat	I			{E8C2545B-A584-42CF-A36E-B14A8B669E44}
								G+	Zulfiqar Bhat	I			{2F1F9D70-59B1-4C32-8534-0DDCF92D3DCB}
								All+	Zulfiqar Bhat	I			{E855989C-4661-4930-BC66-22CC4DE7CF67}

# UN Field Operations

## Security Incident Report (UNAMID)

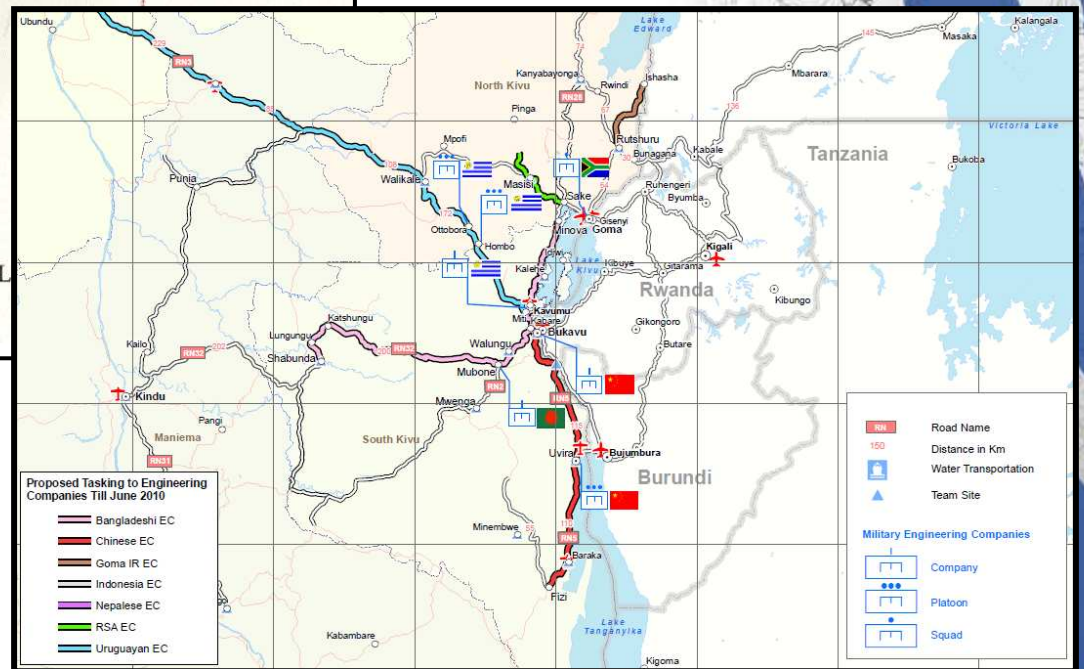
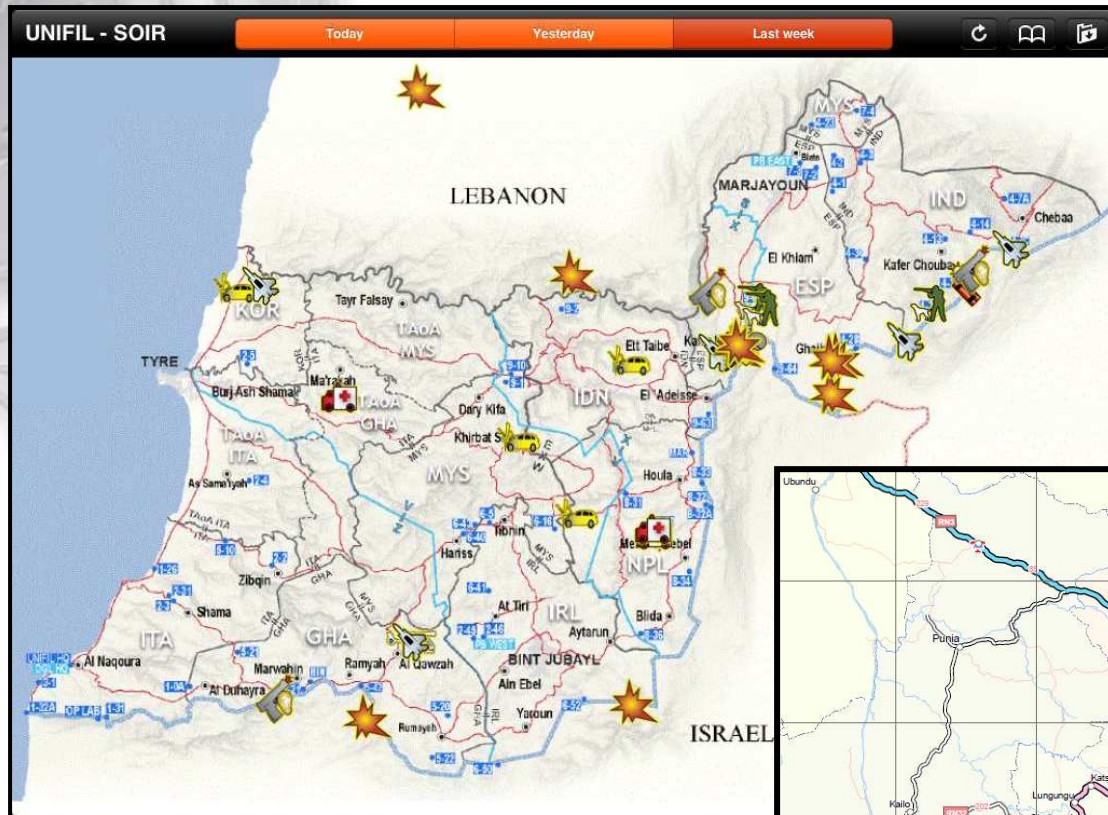


Security incidents Analysis and Reporting information System (SARS)



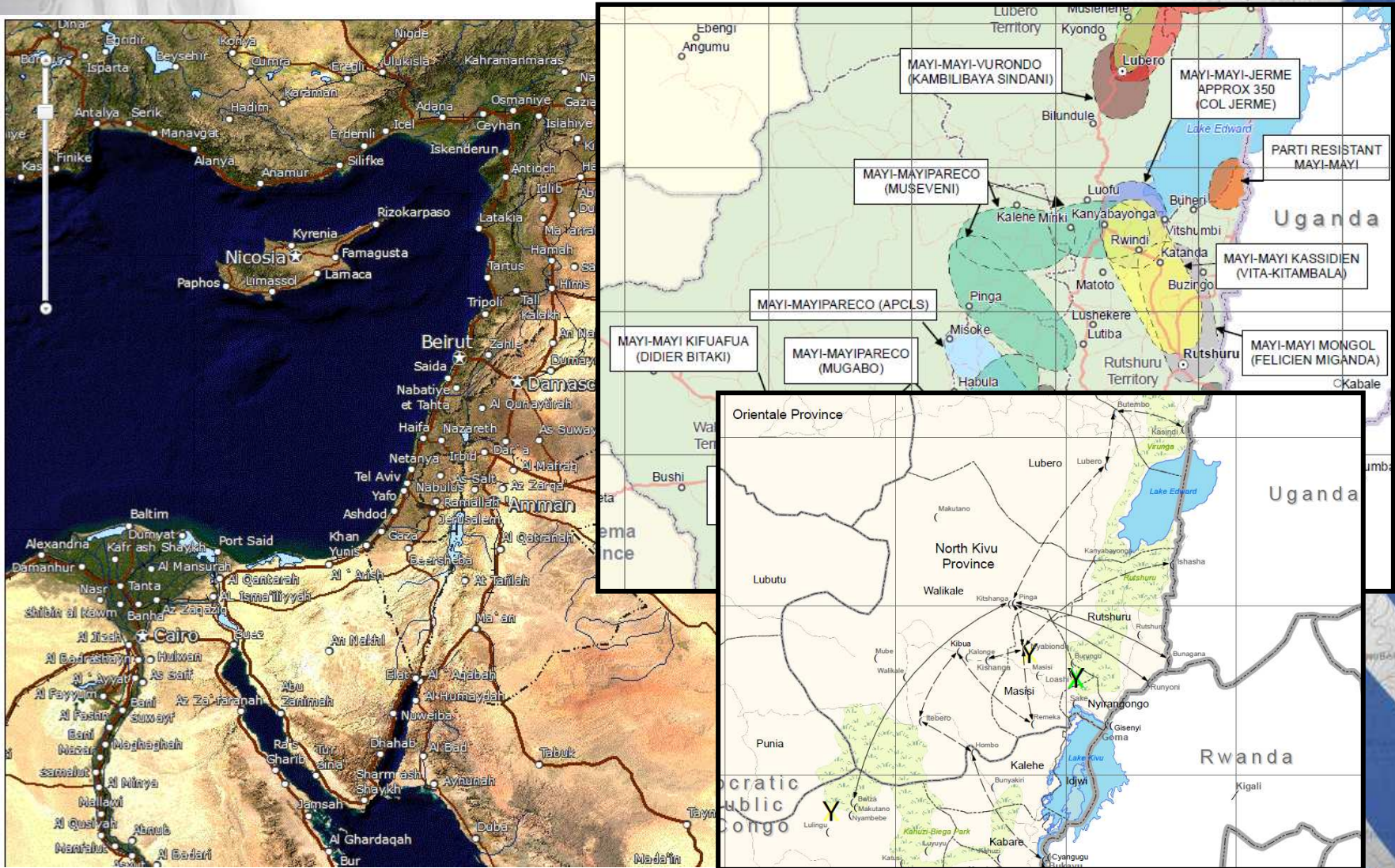
# UN Field Operations

## Security Incident Report (UNIFIL) & Tasking Plan (MONUSCO)



# UN Field Operations

## Dashboard (UNHQ) & Situational Awareness (MONUSCO)



# UN Field Operations

## ERP – Resource Management (MONUSCO)

**Field Assets by Name**

Asset Name: 4M GENERAL PURPOSE

- 4M GENERAL PURPOSE
- 4M UTILITY
- AIR COMPRESSOR
- AIR CONDITIONER
- AMPLIFIER HIGH POWER SATELLITE
- AMPLIFIER LOW NOISE SATELLITE
- ANTENNA MASTS
- ANTENNAS
- AUDIO EQUIPMENT
- BAKING MACHINE
- BENDING FORMING MACHINE PIPES
- BERLINER
- BINOCULAR
- BOILER
- BRIDGES
- BUS OVER THE PAK
- CABINET
- CAMERA LENS
- CAMERA PHOTO
- CAMERA VIDEO

**Map Footprints**

- Assets in Use
  - Between 1 and 600
  - Between 600 and 2000
  - TIME Between 1390 and 5000
  - VALUE Above 6000
- Units in Stock
  - Between 1 and 100
  - Between 100 and 1000
  - Between 1000 and 5000
  - Above 5000
- Feeding Write Off
- Assets Distribution
- Monitor Flight Routes

**Map Footprints**

- MonucFlightRoutes
- MONUC Flight Routes
- DRC
  - Locations
  - Lakes
  - Main Rivers
  - DRC Provinces
  - MONUC Region Boundary
  - MONUC Regions
  - Country Borders
  - Country Areas
  - Atlantic Ocean

**Search Results**

LOCATION	DESCRIPTION	QTY	UNIT	AMOUNT	STATUS
BEW	BINOCULAR	50		\$1,785.76	0
BRW	BINOCULAR	1		\$74.00	0
BRV	BINOCULAR	27		\$1,995.76	2
CON	BINOCULAR	13		\$4,006.76	0
KUE	BINOCULAR	7		\$1,263.00	0
KAN	BINOCULAR	10		\$1,393.00	0
GAM	BINOCULAR	2		\$311.00	0
NIS	BINOCULAR	30		\$1,779.76	0
SIN	BINOCULAR	40		\$4,445.28	0
LUB	BINOCULAR	42		\$2,770.40	0
MUN	BINOCULAR	3		\$1,260.00	0
BEU	BINOCULAR	1		\$4,388.00	0
STN	BINOCULAR	19		\$1,070.00	0
SAN	BINOCULAR	3		\$1,000.00	0
OTI	BINOCULAR	1		\$65.76	0

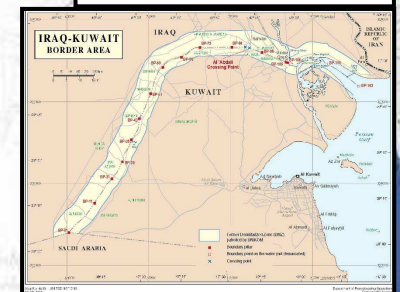
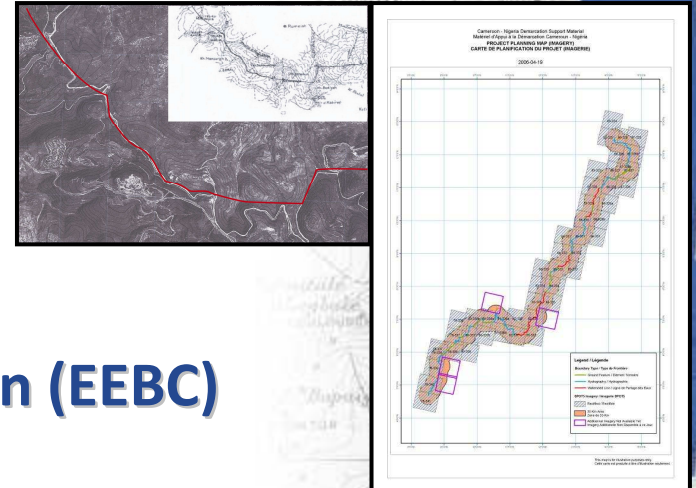
# UN experience in International Boundary

## Completed:

- Iraq-Kuwait boundary demarcation
- Israel-Lebanon (Blue line)
- Cyprus (Green line)
- Eritrea-Ethiopia Boundary Commission (EEBC)
- Iraq – disputed internal boundaries

## Ongoing:

- Cameroon-Nigeria Mixed Commission (CNMC)
- UNIFIL: Israel-Lebanon (Blue line)
- Iraq-Kuwait Boundary Maintenance Project (IKBMP)
- *North-South Sudan Border Committee*
- *Technical assistance to African Union Border Programme (AUBP)*



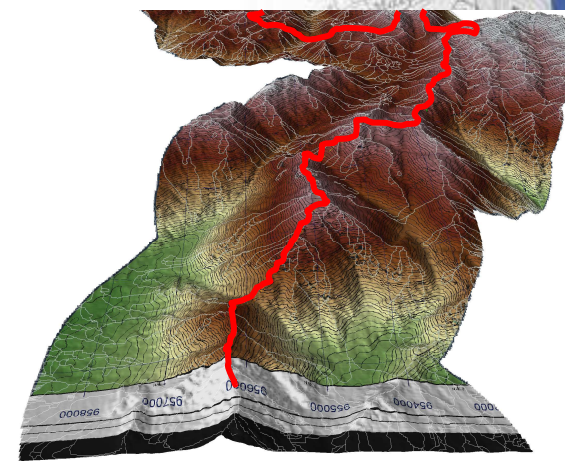
# UN experience in International Boundary

## CNMC Watershed Workshop Atelier Bassin Versant de la CMCN

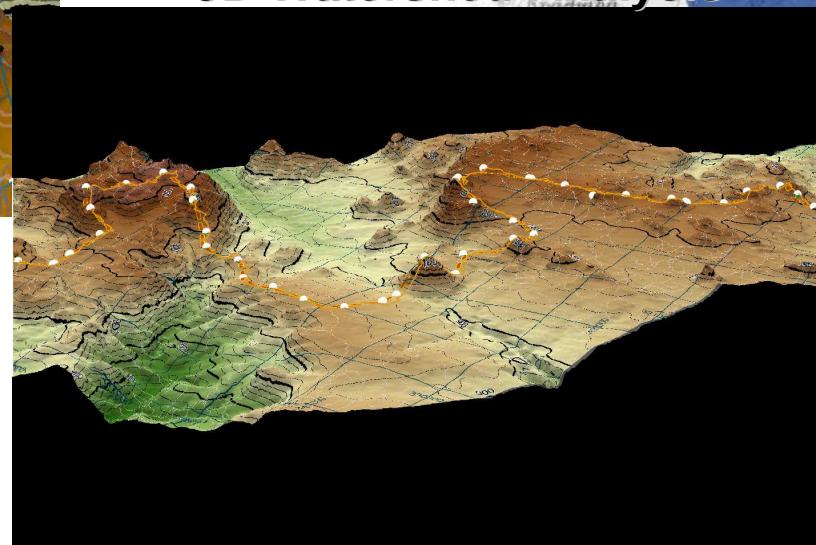
Overview of the Watershed Extraction Process  
Aperçu de la méthode d'extraction des bassins versants

UNLB / BLNU  
August 2011 / Août 2011

Training-Workshop  
for Cameroon - Nigeria  
boundary demarcation

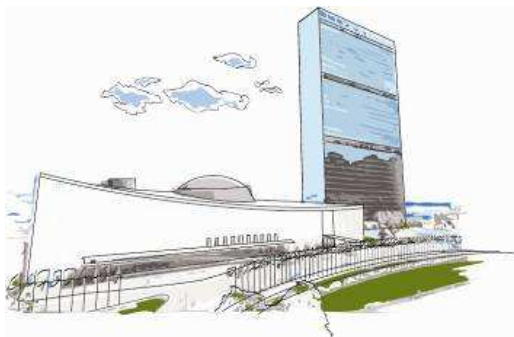


3D Watershed Analysis





# Challenges to effectively support UN Operations

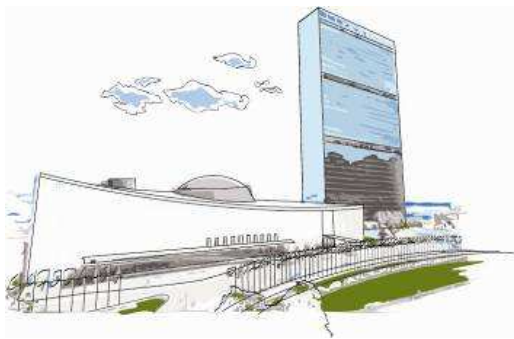


# Challenges to support UN

- Being prepared to provide global geo support in terms of geographical scope;
- Lack of geo-information for likely areas of UN operations – **“No Maps”**;
- To provide geo support for immediate operational demand within limited time and resources;
- Required a long lead time to generate effective geo-information;
- High cost to build spatial data infrastructure for UN operations.



# UN Cartographic Section's Support Framework and Capacity Building





# Organizational Structure

## UN Peace Operations

### Cartographic Section

#### Boundary & Demarcation Projects

CNMC

IKBMP

AUBP

UNIBIS

#### Geo Support

- Security Council
- Secretariat
- Map making
- Geo-analysis
- International boundary issues

#### Geo Operations

- Peace operations
- Field missions
- Plans & policies
- Provide geo-solution
- Collaboration

#### GIS Centre (UNLB, Italy)

- Base map & geo-data production
- Terrain analysis
- Technical support
- Geo-data repository
- Training

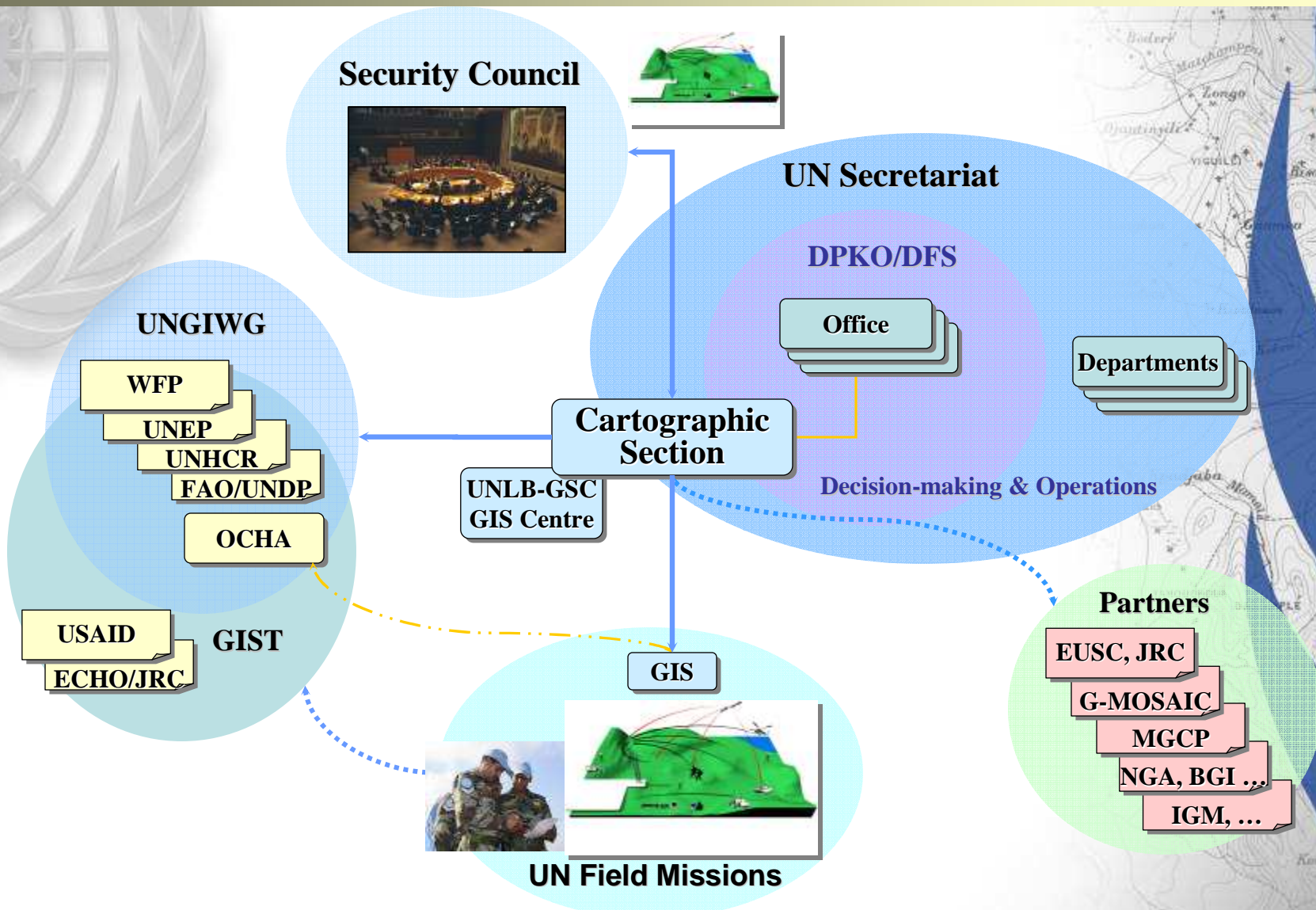
#### Mission GIS Team

<b>MINURSO</b>	Western Sahara
<b>MINUSTAH</b>	Haiti
<b>MONUC</b>	D.R. Congo
<b>UNDOF</b>	Golan Heights
<b>UNIFIL</b>	Lebanon
<b>UNMIL</b>	Liberia
<b>UNMISS</b>	South Sudan
<b>UNMIT</b>	Timor Leste
<b>UNOCI</b>	Ivory Coast
<b>UNAMID</b>	Darfur
<b>UNAMA</b>	Afghanistan
<b>UNSOA</b>	Somalia
<b>UNISFA</b>	Abyei Region
<b>UNSMIL</b>	Libya

**200 GIS experts  
in UNHQ & UN Peace Operations**

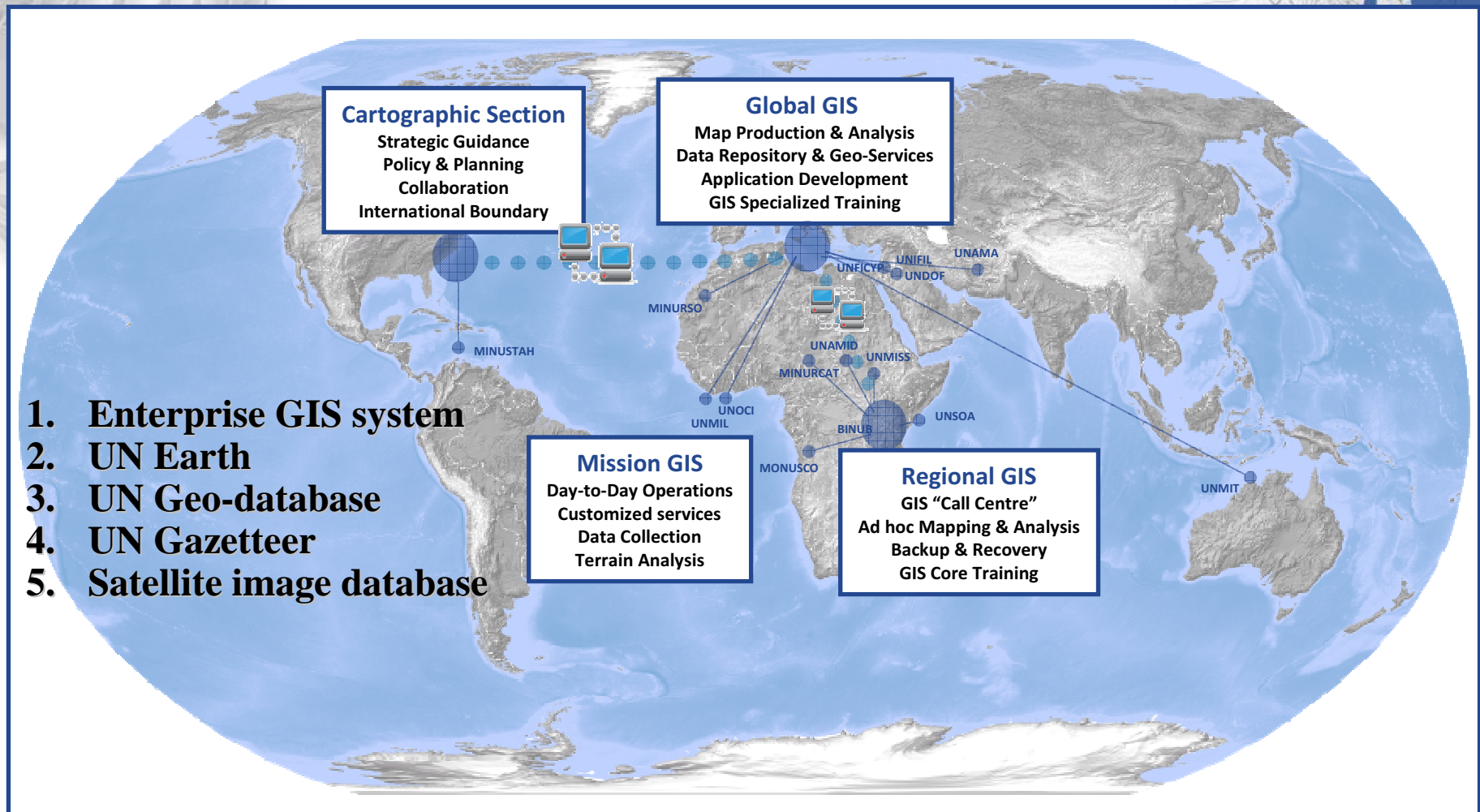
# Geo Operational Concept

## Common Operating Picture & Strong Partnerships



# Global GIS Infrastructure

*3-tier: UNHQ–UNLB–Missions*  
*4-tier: UNHQ–GSC/UNLB–RSC–Missions*

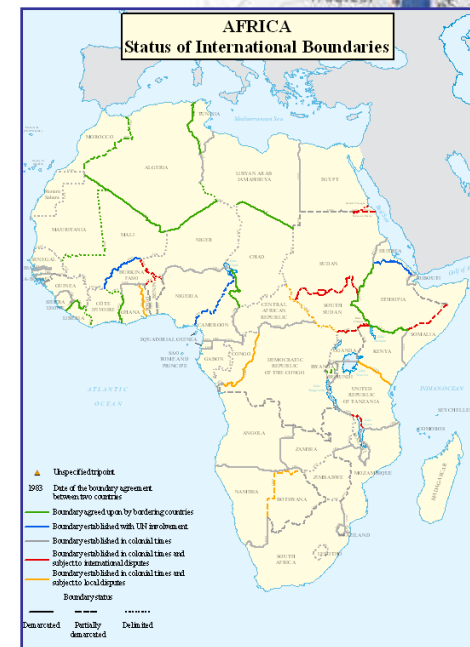


# International Boundary Information System

**Cartographic Section** provides technical assistance and guidance on international boundary issues

*Activities include:*

- ⇒ Provide analysis and guidance to queries raised by UN Secretariat and UN Family
- ⇒ Provide direct technical assistance to Member States





# SALB

Second Administrative Level Boundaries

[www.unsalb.org](http://www.unsalb.org)



**SALB** initiated by World Health Organization (WHO) under the UNGIWG in 2000. As of 2011, the function has been transferred to UN Secretariat (Statistics Division & Cartographic Section).

**Objectives of SALB:** collect, manage and disseminate administrative boundary data and information in coordination with National Mapping Agencies (NMAs)

- ⇒ Seamless administrative boundary maps and data since 2000
- ⇒ Coded historic changes of administrative boundary
- ⇒ Contact information of NMAs

[www.unsalb.org](http://www.unsalb.org)



# UN Committee of Expert on Global Geospatial Information Management

UNCE-GGIM 2012  
13-15 August 2012, New York

Secretariat to UNCE-GGIM  
Statistics Division (DESA) and Cartographic Section (DFS)



- UNCE-GGIM 2011, Seoul
- 24-26 Nov & 23, 27 Nov 2011
- 350 participants from 90 countries
- 22 UN representatives
- 37 Professional & Private sectors

# TOR of UNCE-GGIM

- To provide a forum for coordination and dialogue on spatial data infrastructures, on enhanced cooperation in the field of global geospatial information;
- To propose work plans and guidelines with a view to promoting common principles, policies, methods, mechanisms and standards for the interoperability and interchangeability of geospatial data and services;
- To provide a platform for the development of effective strategies on how to build and strengthen national capacity concerning geospatial information;
- To compile and disseminate best practices and experiences of national, regional and international bodies on geospatial information related, inter alia, to legal instruments, management models and technical standards;
- In performing its functions, the Committee should build upon and make use of the existing work of other forums and mechanisms in the related field.

**UN-map** is the institutional backbone of our daily cartographic and geographic operations

- **Vector Geo-Database**
- **Developed by UNCS & UN Peace Operations GIS community**
- **Various Scales**

Name	Scale
UNmap-X	1:10,000,000
UNmap-V	1:5,000,000
UNmap-0	1:1,000,000
UNmap-1	1:250,000
UNmap-2	1:50,000
UNmap-3	1:25,000
UNmap-4	1:12,500
UNmap-5	1:5,000

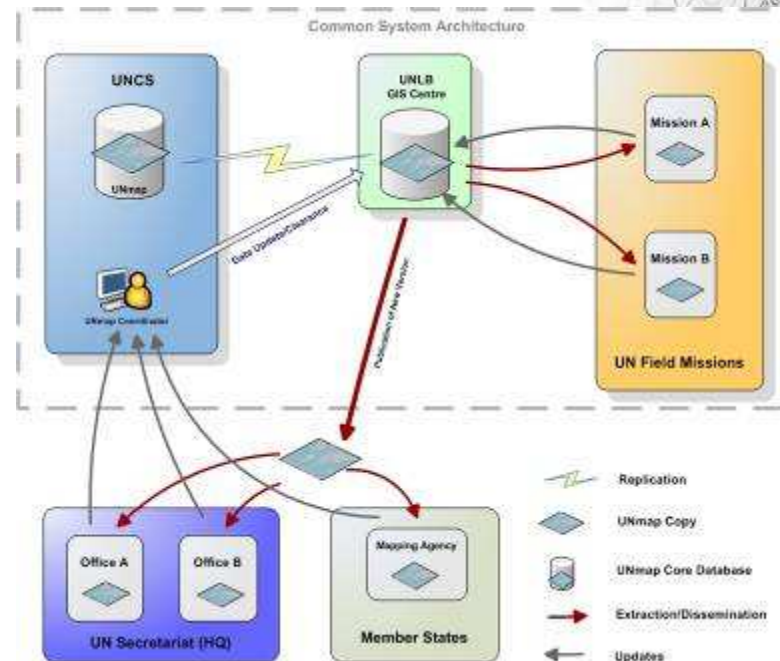
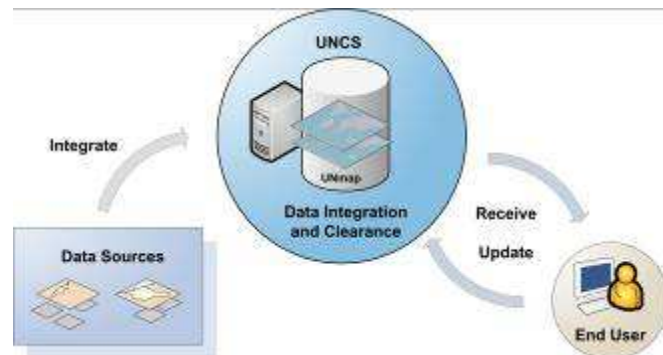






## Where we want to go?

- Base for mapping at various scales
- Web applications
- Serve UN specific needs
- Dissemination within UN-System
- Updated by UN users



# UN Gazetteer

**Objective: provide to UN Operations a reference to search geographical names, locate and map associated features.**

**Operational requirements:**

- **Comprehensive, standardized list of place names for consistent reporting and rapid identification of location of events**
- **The implemented system must be fast, spelling tolerant, easily updatable and in UN full control.**

# UN Gazetteer

## Interim Solution: UN-EC Gazetteer

- Built in 2005 in collaboration with the Joint Research Centre (JRC) of the European Commission (EC).
- Fuzzy search engine using NIMA data enriched with data from Peacekeeping Operations.
- Operated outside of UN control making updates complicated.
- Cost of back-end license to replicate set up on UN network prohibitive.



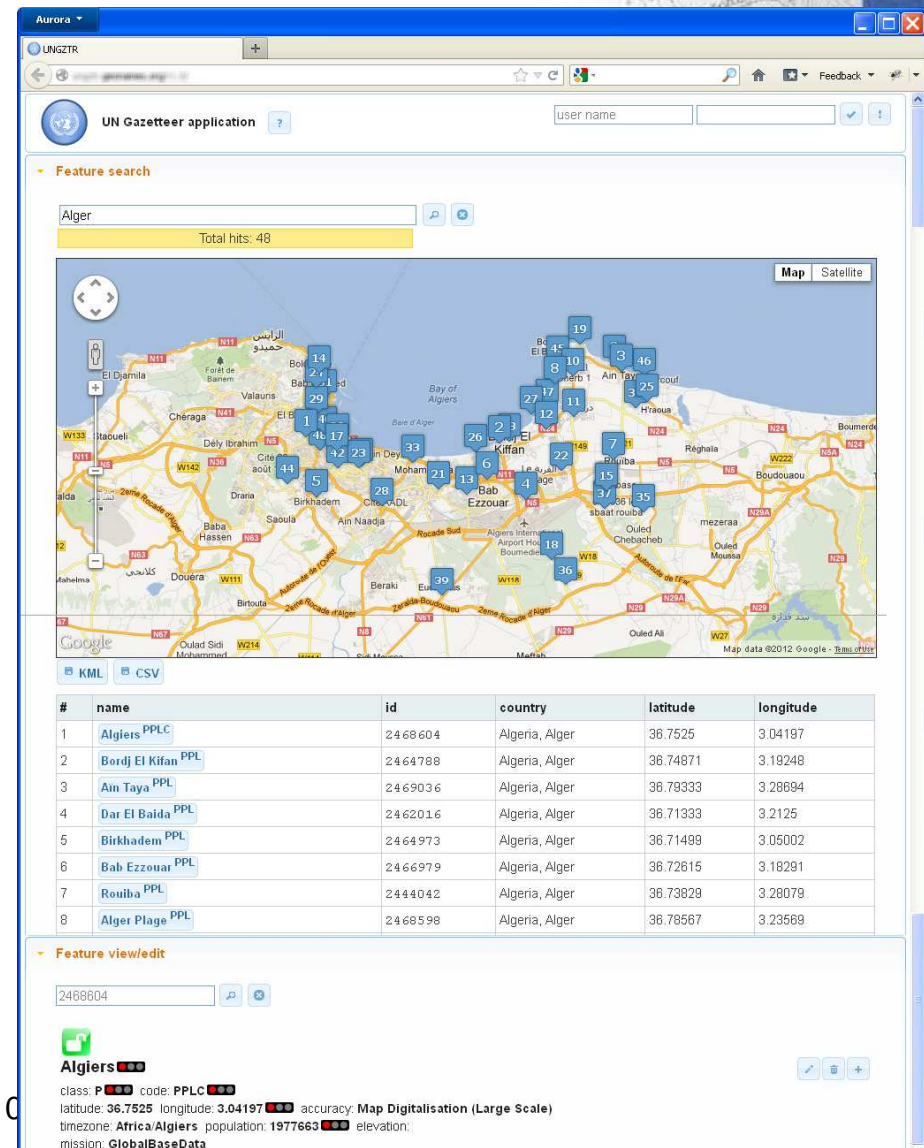
# UN Gazetteer

## Current Status (under development)

- Internally developed, UN owned and operated, based on **geonames.org** technology.
- System is centrally managed and data maintenance is distributed
- Data originate from many authoritative sources through **geonames.org**, enriched by UN mission produced data
- Fast, spelling tolerant search engine to browse and map 10 million names
- Lightweight web-based front-end to interact with data

UN Cartographic Section

New York, O



The screenshot displays the UN Gazetteer application interface. At the top, there is a search bar with the text 'Alger' and a 'Total hits: 48' indicator. Below the search bar is a map of Algeria with numerous numbered location markers. The interface includes a 'Feature search' section, a 'Feature view/edit' section, and a table of search results.

#	name	id	country	latitude	longitude
1	Algiers PPLC	2468604	Algeria, Alger	36.7525	3.04197
2	Bordj El Kifan PPL	2464788	Algeria, Alger	36.74871	3.18248
3	Ain Taya PPL	2469036	Algeria, Alger	36.79333	3.28694
4	Dar El Baida PPL	2462016	Algeria, Alger	36.71333	3.2125
5	Birkhadem PPL	2464973	Algeria, Alger	36.71498	3.05002
6	Bab Ezzouar PPL	2466979	Algeria, Alger	36.72615	3.18291
7	Rouiba PPL	2444042	Algeria, Alger	36.73829	3.28079
8	Alger Plage PPL	2468598	Algeria, Alger	36.78567	3.23569

The 'Feature view/edit' section shows the details for the first result, 'Algiers PPLC', with its class, code, latitude, longitude, accuracy, timezone, population, elevation, and mission information.

# UN Gazetteer

## Way Forward

- **Open utilization to a wider range of uses by integration with enterprise applications.**
- **Improve quality of data within available resources**

### **Challenges:**

- **Include recommendations from UNGEGN, i.e. diacritics, romanization and use of exonyms, while responding to the operational demand.**
- **Densify and improve quality of names outside of UN area of operations through cooperation with member states.**

# **Strong Partnerships**

## **Possible Areas of Cooperation**

To meet the Operational needs effectively & in a timely fashion within the given resource/capacity.

**“Avoid duplications, enhance synergy by cooperation”**

- **UN Committee of Experts on Global Geographic Information Management (UNCE-GGIM)**
  - to support on the UNCE-GGIM activities
- **Possible Joint Projects**
  - UNmap (global - 1:1, 5, 10 millions scales)
  - UNmap (country level – 1:50k, 100k scales)
  - UN Gazetteer
  - Second Administrative Level Boundaries (SLAB)

# Thank you



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