



Kabul Municipality

Pilot Project for Urban Street Addressing & Related Spatial Information Systems for the Municipality of Kabul



جاده بغلان
BAGHLAN ST

GENERAL PRESENTATION

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ADDRESSING IN KABUL

A GLOBAL NEED





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Pilot Project for Urban Street Addressing

&

Related Spatial Information Systems
for the Municipality of Kabul



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I - PROJECT INITIATIVE

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2007

SCOPE OF INTERVENTION

Many reason for the project:

With no system of street coordinates and no baseline information:

- How to locate urban facilities and infrastructure ?
- How to locate property parcels?
- How to pinpoint breakdowns in water, electricity, and telephone systems?
- How to improve on-site collection of water and electricity bills?
- How to set up an efficient billing or local tax system?
- How to find your way around a constantly growing city?
- How to dispatch ambulances, firemen, and law enforcement personnel quickly?
- How to send mail and messages to private homes?

A WORLDWIDE INTERNATIONAL EXPERIENCE

Arkane Foncier

Created in 1770, in Paris (France), Arkane Foncier Provides integrated services towards land management, development, GIS software & customized solutions.

- 20 years of operational GIS Corporate Solution
- 3 french branches,
- 1 international subsidiaries (Afghanistan)
- 100 engineers and technicians ,
- 2000 GIS licenses sold
- 15 countries.



FIT Conseil

France Ingénierie Topographie

Created in 1968, in Nantes (France), FIT Group, as dramatically diversified its domain of expertise , from an initial charter surveying activity to a broad and integrated GeoSpatial offer.

- 38 years of operational experience
- 11 structures,
- 13 french branches,
- 5 international subsidiaries
- 445 engineers and technicians ,
- 1000 (over) aerial survey, mapping and GIS projects
- 25 countries.

FIT Conseil & Arkane have set up in 2004 a Pvt Ltd Company in Afghanistan,

FKH Geoexpert Services.



FKH Geoexpert Services comprised 30 Afghan Engineers providing Full fledge expertise in land survey, topography, GIS and surveying.

FUNDING

- 9 months project funded by **the French Ministry of Economy and Finance**





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II - PROJECT ORGANIZATION

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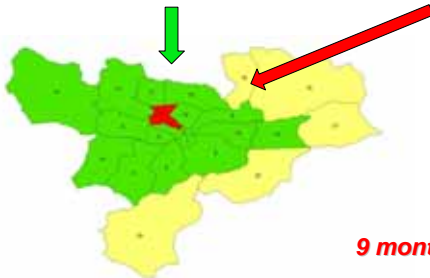
EXPECTED DELIVERABLES A GEOGRAPHICAL URBAN DATA BASE

I - For 17 Districts (570 km²)

The new 1:2000 scale map is the base for the street addressing and could act as the seamless Urban Spatial Repository for Kabul.

Deliverable

- The road network,
- The street blocks,
- The Physical parcels boundaries,
- The available Local placenames,
- The administrative limits (Districts, Gozar when available),
- Major natural Features (parks, rivers).



II - For One Pilot District (12 km²)

1) The detailed mapping information which will nurtured the Municipal GIS (City planning dpt, Revenue dpt, engineering dpt .)

Deliverable

- On top of the 1:2000 scale map data;
- **The Building Footprints**

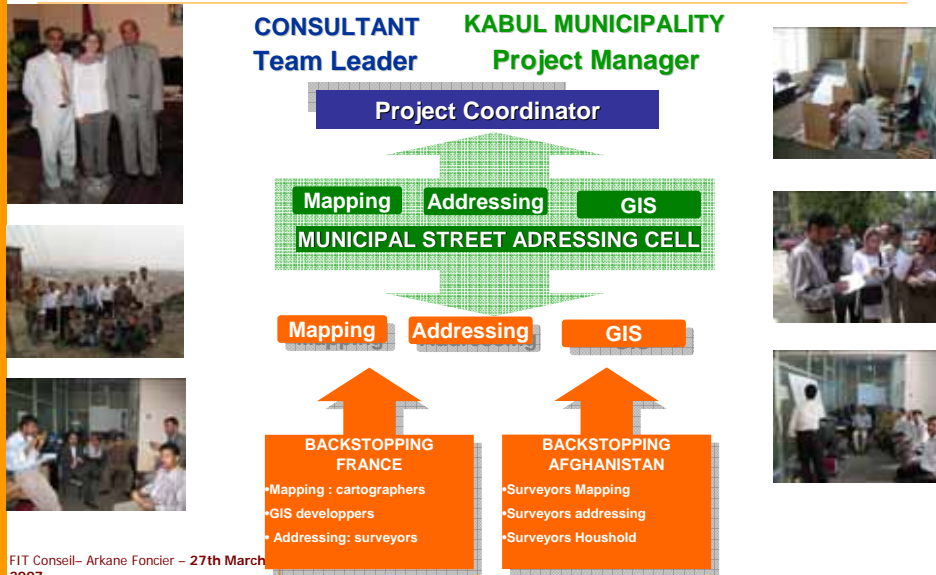
2) The Addressing System including methods, framework and capacity for future implementation of a sustainable Addressing System for the entire city of Kabul.

Deliverable

- Codification model (District, Street, building codes),
- Addressing door to door Field survey,
- Comprehensive street index,
- Addresses data base,
- Boarding (stenciling),
- Addressing project Extension Plan Report.

9 months from March to December 2007

PROJECT ORGANISATION



STEERING COMMITTEE

- **Chairman:**
Mr. Rahim, Director of City Planning
- **Voting members:**
Municipality Tax Department, Municipality District representatives, Ministry of Urban Development, Ministry of Telecommunication, Ministry of Culture
- **Observers:**
French Embassy, World Bank, USAID/LTERA

CAPACITY BUILDING WITHIN CITY PLANNING

GIS Leader



Field Leader



Public Relationship



Mapping and Data Collection Experts



DATA COLLECTION TEAM

- **Door-to-Door survey: 2 months**
 - 14 surveyors: 5 women with experience in door-to-door survey and 9 engineers (including 2 women) from Polytechnic University with expertise in mapping
 - 6 data integrators: 5 engineers from Polytechnic and 1 Microsoft Access data integrator
- **House Numbering: 2 months**
 - 5 teams of 2 men each: 1 engineer from Polytechnic and 1 painter
 - 3 data integrators: engineers from Polytechnic
- **Quality Control and Database release: 2 months**
 - 5 engineers from Polytechnic



EQUIPMENT

- **Hardware**
 - 11 computers
 - A4 black&white printer
 - A3 color printer
 - A0 plotter
- **Software**
 - ArcGIS 9.1
 - Microsoft Access
- **Additional arrangements**
 - UPS
 - Generator



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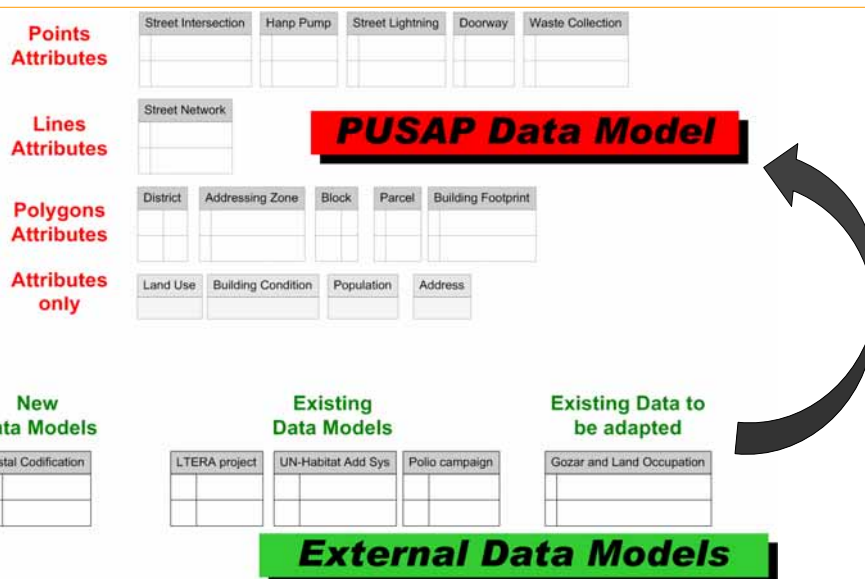
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III - PROJECT IMPLEMENTATION

A FLEXIBLE DATABASE

- Build a Data Model with basic information in order to full fill a certain number of requirements for:
 - Navigation
 - Mail delivery
 - Location and management of urban facilities and infrastructures such as road pavement, traffic, water and electricity supply
 - Tax and billing systems implementation
 - Health program management
- Build a flexible Data Model in order to make the link with other important databases such as:
 - LTERA Data Model
 - UN-Habitat Addressing System
 - Polio vaccination database
- Build a comprehensive database to facilitate the implementation of the future Master Plan

1- CONCEPTUAL DATA MODEL



2- BASE MAP DIGITIZED DATA

KABUL - Pilot Urban Street Addressing Project

District 4



FIT C
2007

3- FIELD DATA COLLECTION

■ Door-to-Door data collection

- Land Use
 - Residential, Commercial, Offices&Services, Industrial, Vacant, Agriculture...
- Civic Amenities
 - Banks, Wedding Halls, Hammams, Schools, Hospitals, Parks, Cultural centers, Play grounds...
- Building Conditions
 - Number of floors, Water supply, Electricity supply, Latrine information
- Public Utilities
 - Road pavement and its condition, Equipment such as Drainage, Hand Pump, Street lighting, Concrete Waste Container, Name if any
- Population
 - Number of people per household, number of families, number of people working, number of children

■ Meetings with Wakils and citizens

■ Explanations of the project with the House Numbering system

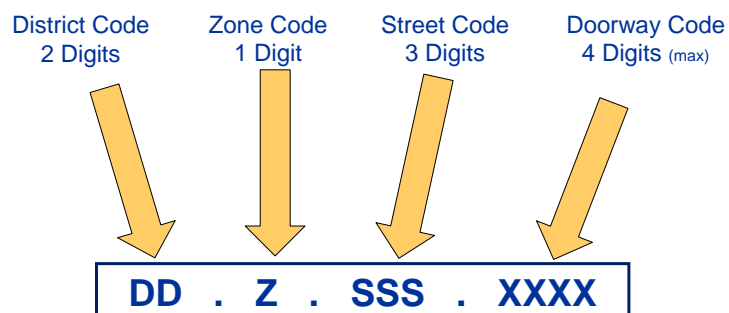


4- STREET CODIFICATION

- **Frame**
 - Kabul frame based on District Boundaries
- **Street Codification**
 - Odd/Even numbering system
 - Codification of all accessible streets, paths and dead ends
 - Stops on gated accesses
- **Zoning**
 - Based on Districts
 - Define areas with less than 900 Streets
 - In case of multiple zone definition (districts > 900 streets), use Gozar limits, Urban Fabric and major street network to create the addressing zones

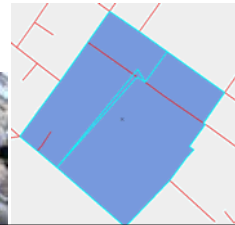


5- HOUSE NUMBERING



6- QUALITY CONTROL

- Field control by engineers from city planning during the survey
 - Verify physical parcel boundaries, building footprint and survey sheet
- In office control for Topology:
 - Perfectly snapped parcels (no overlapping or intersecting)
 - Perfectly joined street vectors
 - Perfect snapping between block contours and
 - Eliminate parallax and shadow while digitizing



7- DATABASE RELEASE

December 2007

- Database release to the Municipality together with:
 - Data Management Software
 - Base Map for 17 Districts of Kabul
 - Complete Addressing System Implementation Methodology
 - Equipment
 - Addressing Unit Team





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IV – CHALLENGES AHEAD

PROJECT RATIONALE & OBJECTIVES

RATIONALE:

Set up a standardized Street Addressing System for Kabul and Afghanistan

Systems for **identifying streets, buildings, and plots** have simply been vanished with the war, being unable to keep up with the pace of urbanization.

A Challenge

Prepare the **intense urban and population growth** raising **unmatched new urban** challenges: water and electricity supply, infrastructures, security, health, tax collection, customer service...

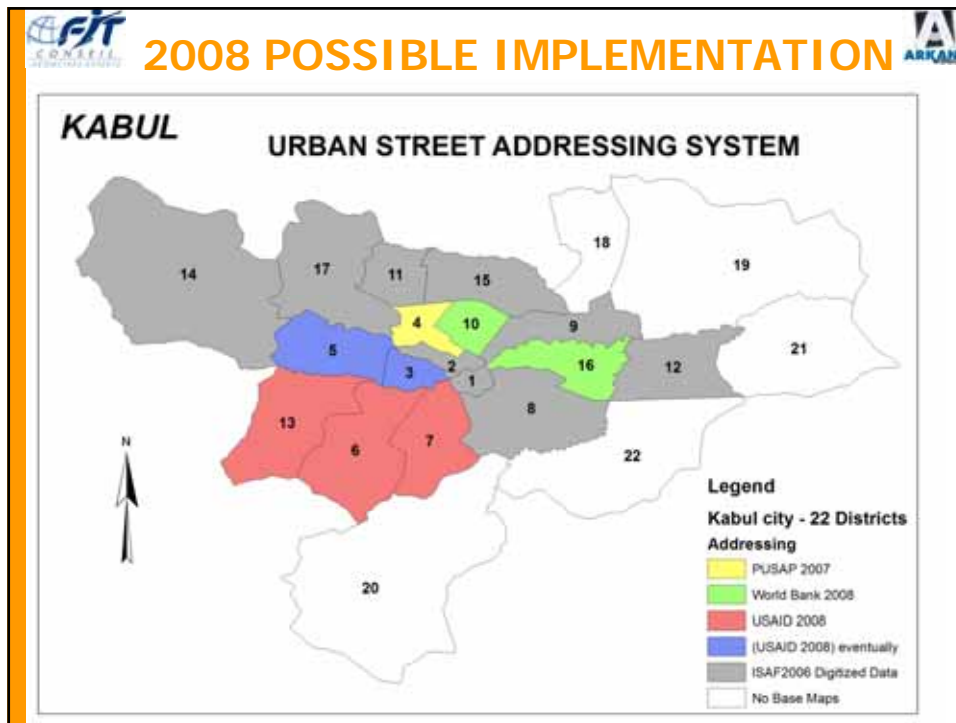
MAIN OBJECTIVES :

Locating: Allowing an **easy location** wherever in Kabul, enabling citizens, foreigners, private companies, emergency services to **find their way** conveniently

Collecting: Collecting information on their cities and facilitating the updating of simplified **urban planning** documents.

Mobilizing: **Mobilizing local resources** more effectively

Maintaining: Maintaining **facilities and infrastructure**.



SPONSORS NEEDED

For District 4

Street Signage Sponsorship: between \$100,000 and \$400,000

For the implementation of the project to the **entire town**

Possible sponsors: World Bank, LTERA/USAID, Private sector

The Pilot Urban Street Addressing Project
(PUSAP)

is implemented by

FIT-Conseil / ARKANE-Foncier

