Vaccination Tracking System (VTS)

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Novel-T

• Swiss company based in Geneva

• Founded by 3 former WHO staff members

Philippe VELTSOS
• MBA, M Sc in Telecomm, Business/System Analyst
• 15 yrs of experience (10+ in Public Health IS)

Patrick BRIAND
• Electrical and Software Engineer
• 20 yrs of experience (10+ in Public Health IS)

Stephane VOUILLAMOZ
• MBA, Software Engineer
• 14 yrs of experience (10+ in Public Health IS and GIS)
Novel-T

- Active in Public Health and Humanitarian Projects
- Working with UN agencies, NGOs, Governments and local partners to provide innovative solutions
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Core Activities

• Business Analysis
• Systems Analysis
• Project Management
• Software Development
• Problem Solving
Vaccination Tracking System (VTS)
What is VTS

- An information system which can monitor house to house vaccination teams in the northern states of Nigeria
Main Objectives

• Compute “geographic coverage” for each settlement

• Identify in near real-time missed or partially covered settlements

• Identify chronically missed or partially covered settlements
Solution Components

- **Distributed geodatabase**
- **Local Laptops**
- **National EOC Dashboard**
- **GPS-enabled phones**
- **Tablets / Hamlet Buster**
Distributed Geodatabase

- Repository of inhabited settlements in both urban and rural areas and other geo-data

- Architectured to support multiple concurrent editors constantly enhancing the geo-data
# Distributed Geodatabase

## Built up areas (11’000+)
- Large settlements
- Cities with more than 100 residences

## Small Settlement Areas (16’000+)
- Rural villages
- with 20-100 residences

## Hamlet Areas (81’000+)
- Clusters of hamlets within 200m from one another
- Each hamlet containing less than 20 residences
GPS-enabled Phones

- GPS-enabled android phones
- Rely on GPS network only
- Operate completely offline
- Capture GPS position every 2 mins
- Distributed to 12’000+ vaccination teams
- No interaction required - vaccination teams simply need to carry it
Local Laptops

- Extract GPS positions from the phones via USB
- Operate completely offline
- Centralize all GPS position per day / LGA / campaign
- Compute daily analytics, display dashboard and maps including offline satellite imagery
- Inform the decisions and planning for the next days
- Transfer GPS positions to EOC via MiFi / WiFi
Emergency Operation Center (EOC)

- Web-based dashboard
- Consolidated view at the National EOC
- Fully automated data reception and processing
- Updated near real-time (< 30 mins to compute daily analytics)
- Cross-campaign analyses
Tablets (aka Hamlet Buster)

- Ruggedized and **field-ready**
- Rely on **GPS network only**
- Operate **completely offline**
- Contains **settlement locations and offline satellite imagery**
- Help locate and reach **chronically missed settlements during microplanning or in-between round activities**
- Can collect **geo-referenced data** such as place names and other information
Campaign Workflow

- **GPS-enabled phones**: Collect time-stamped GPS coordinates every 2 minutes.

- **Given to Ward Focal Person (WFP) at LGA HQ each morning**

- **5a-6:30a**: WFP returns to Ward take-off point and gives phones to vaccinators.

- **7a-8a**: Vaccinators return phones to WFP at the end of their day.

- **11a-5p**: WFP returns to LGA-HQ where GPS tracks are downloaded to Laptop and geo-coverage computed.

- **2p-8p**: Tracks uploaded to EOC/Dashboard via MiFi.

- **Missed Settlement Report generated at end of days 4 & 5**

- **Feedback for daily coverage provided to WFPs and LGA team at daily meeting**
Key Facts & Figures

- **18** campaigns monitored since Jan 2013
- **60** LGAs monitored per campaign
- **12’000+** teams in the field visiting **15’000+** settlements per campaign
- Generating **4’000’000+** GPS positions in a single day
- Processed in **< 30 mins**
- **17’000’000+** GPS positions collected in a single campaign
- **115’000’000+** GPS tracks in the VTS
- **100+** zero dose child vaccinated thanks to the Hamlet Buster in 2 months
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