



Rolta C2 for Border Security & CIP Solution

Powered by Rolta Command & Control Suite

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- Present Security Scenario

- C2 / CIP Technologies

- Need for Integrated Solution

- Why Rolta

Role Peace Time



Role War Time



Present Security Scenario



DETECT

Long range sensor for Early Warning / Detection, identification & tracking

DETER & DELAY

Smart Physical Fencing with automated intrusion alerts for deterrence & delay

RESPOND

Command & Control system for Centralized Command,
Localized Control , Collaborative Response

Sand Dunes of Bhagnau, Jaisalmer

All Terrains

Type I - Riverine, Delta & Estuary areas



Type II - Waterlogged & Swampy areas

Type III - Creek Areas



Type IV - Foggy Areas

Type V - Thickly populated border areas



Type VI - Hilly areas

Type VII - Tropical Areas



Type VIII - Deserts

MULTI-TIERED SECURITY SYSTEM

Long range
Cameras

Approaching Humans, Vehicles

Under Ground
Sensors

Tripwire, Trespassing, Loitering

Smart Fence

Attempt to climb fence, cut or separate concertina coils

CENTRALIZED SECURITY MGMT SOFTWARE

ALERT AT COMMAND & CONTROL

**ROLTA COMMAND
& CONTROL**

Surveillance Integration | Centralized Monitoring | Sensor Mgmt |
Zone Mgmt | Standard-Operating-Procedures | Geospatially
Referenced Assets / Events

Elements of OODA

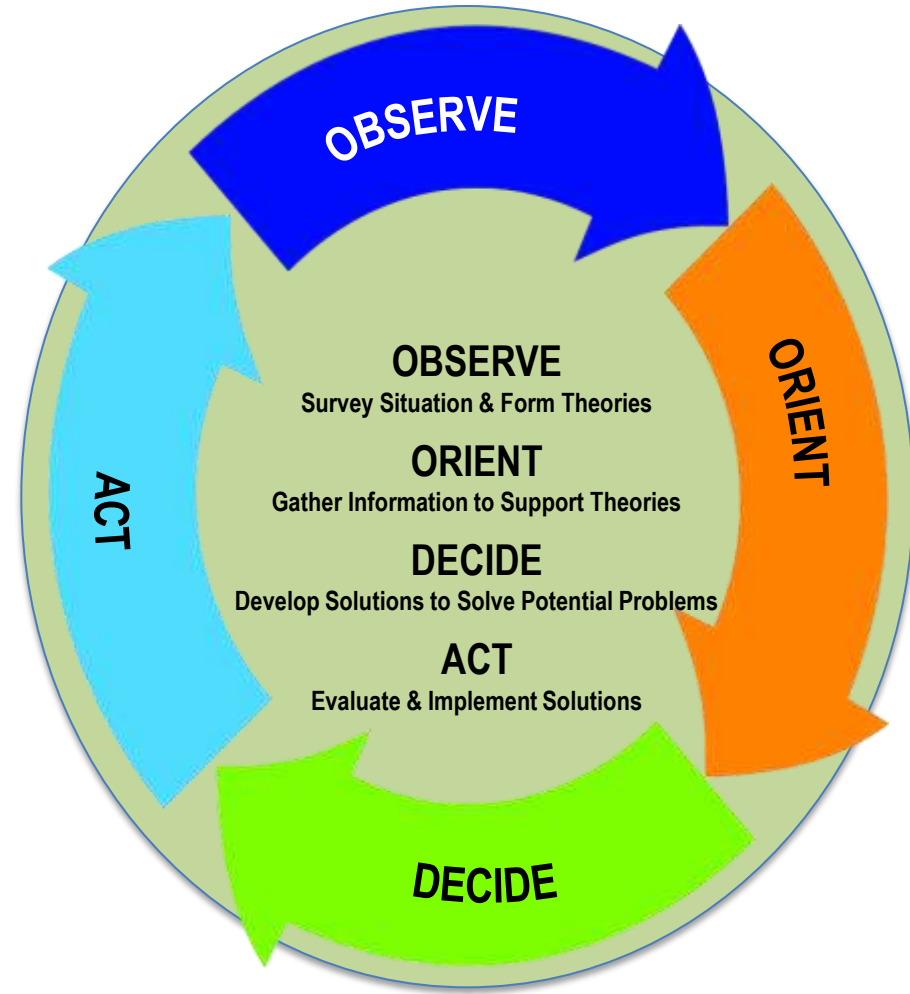
Observe : Data Collection including meta data

Orient : Establish context and Intent

Decide : Triangulate with big data and predictive analysis solutions

NCW : Net Centricity to achieve NCW capabilities

Act : Respond quickly down to the packet stream level



Technology a Force Multiplier - COP

Collect Data



Collection of Data from Multiple Sources

Fuse Data



Real-time Data Correlation and Fusion

Intelligent Fusing of Disparate Data

Solution Features – RSA, COP

MULTI-SENSOR/SYSTEM FUSION

GIS-ENABLED MONITORING

ADVANCED ALARM MANAGEMENT

GPS VEHICLE TRACKING

MULTI-AGENCY COLLABORATION

CUSTOMIZABLE RESPONSE PLAN

3RD PARTY INTEGRATION

REMOTE MONITORING

USER BASED ACCESS

REPORTING & AUDITING

VIDEO INTEGRATION

UNIFIED PLATFORM

Real-time Situational Awareness

Multi-Segment Collaborative Situational Awareness & Response Platform



● Border Security

● Critical Infra protection

● Vessel Traffic System

● Coastal Security



Command & Control Centre

Data Fusion Centre

Computer Aided Dispatch Centre

Land & Maritime Surveillance

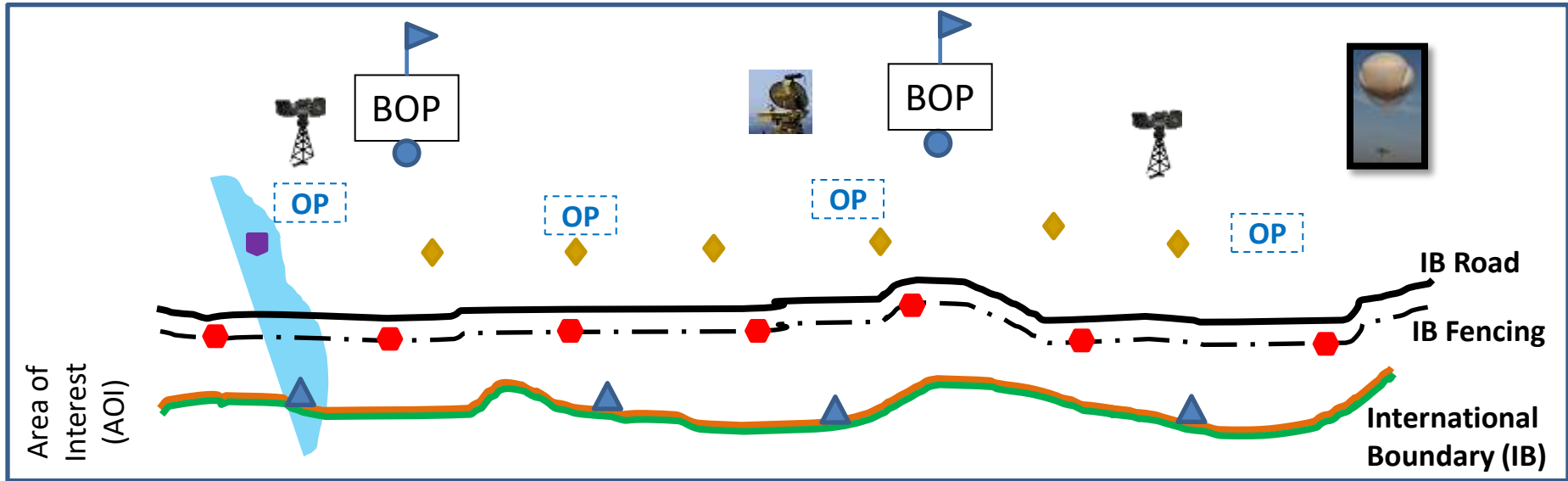
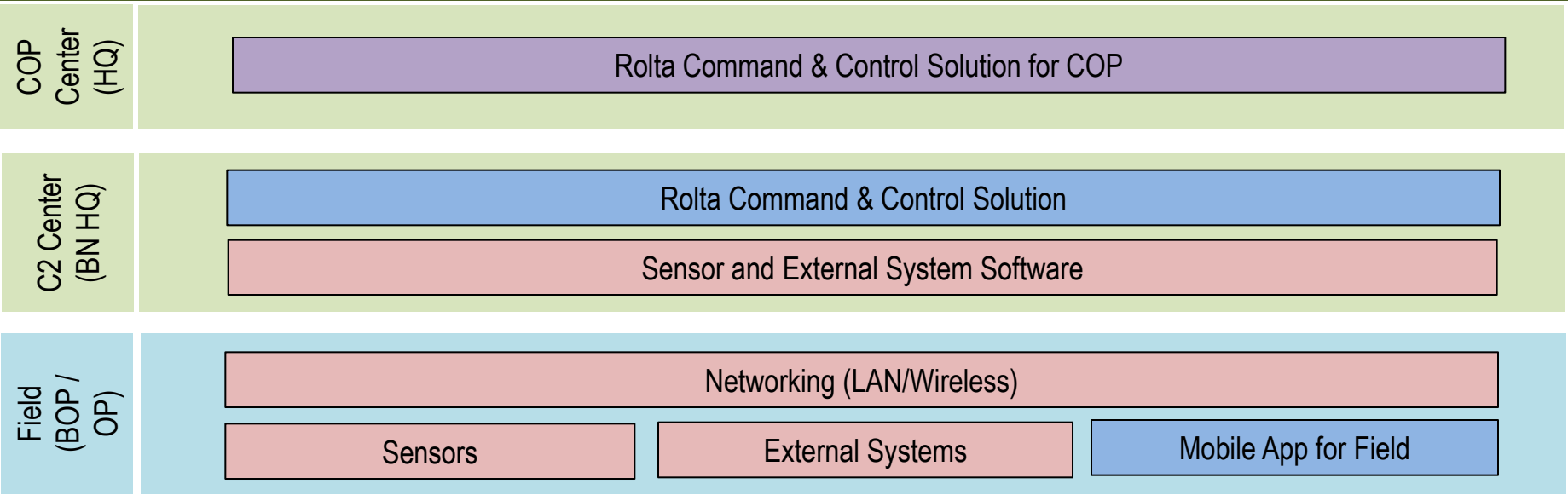
Comm. & Networking

Mobile Surveillance Vehicles

Integrated Sensor Management with Multi-Agency Dispatching

Provides Truly Actionable Intelligence for Collaboration & Coordination with various agencies

Rolta Border Security Solution – Overview

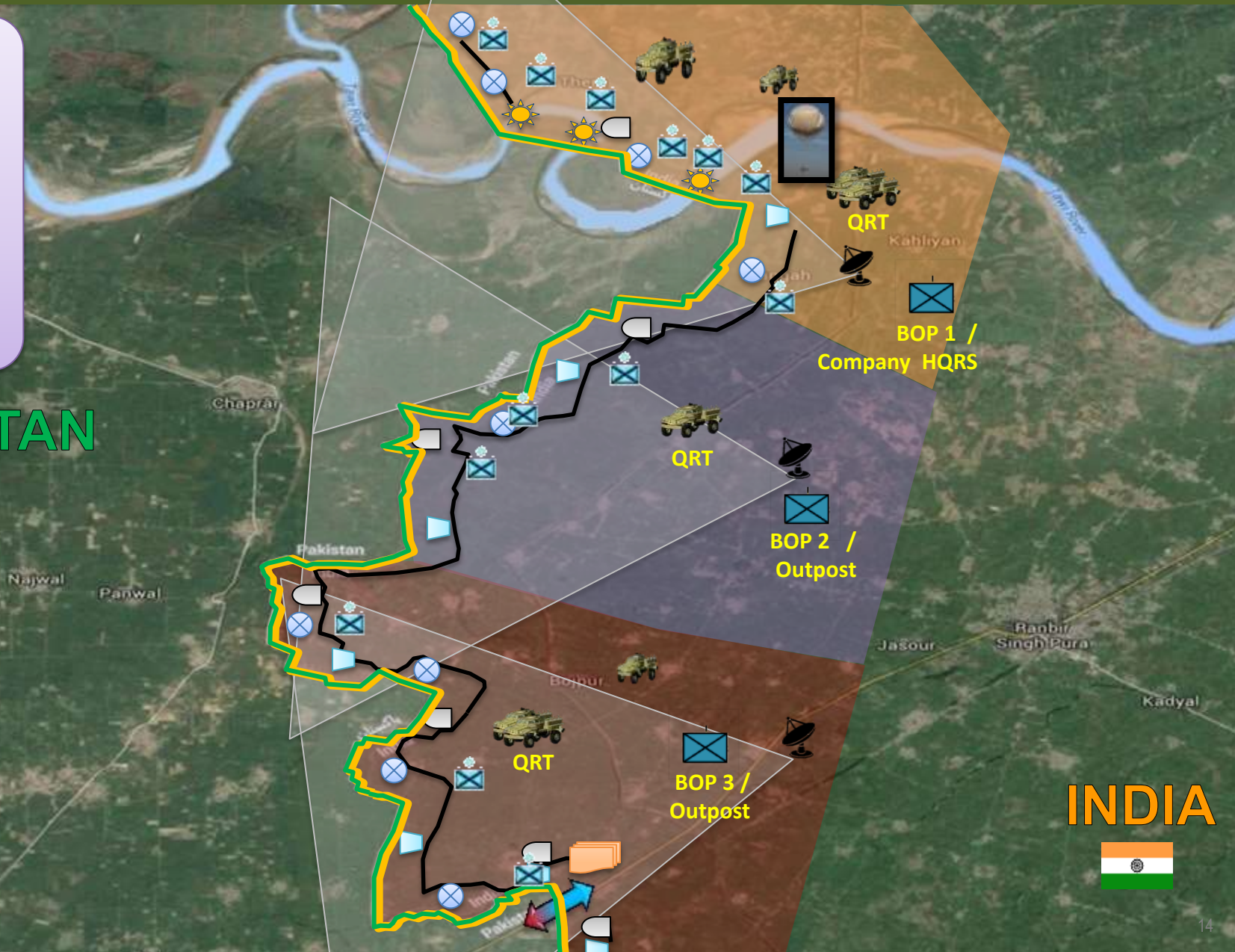


Solution Workflow



- Flood Light
- EO Devices
- UGS
- UWS
- Biometric
- OFC Cable
- Radar
- Aerostat

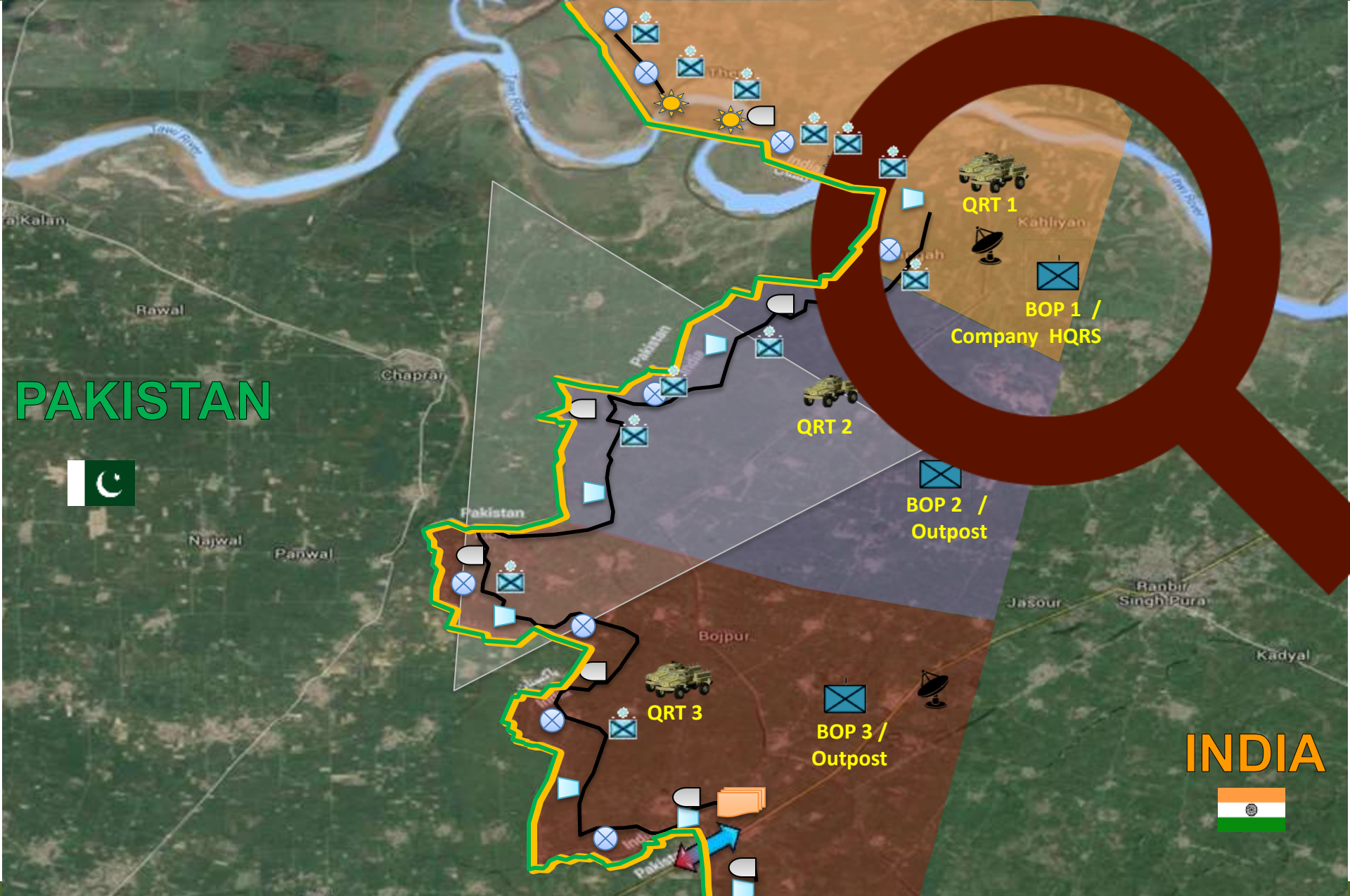
PAKISTAN



INDIA



Solution Workflow

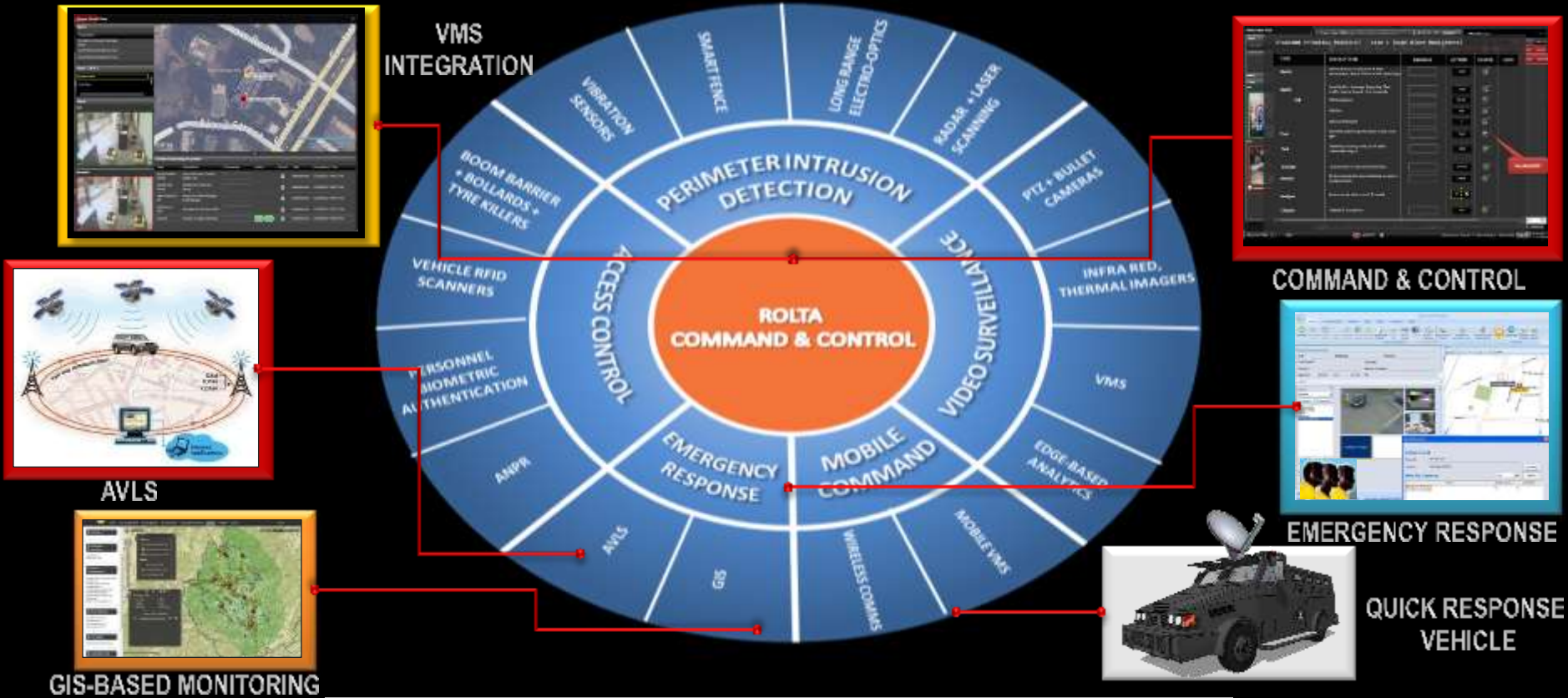


Solution Workflow



Critical Infrastructure Protection System Landscape

The Security Solution is built around ROLTA Command & Control



'A single user interface.'

CIP – Airport Scenario

MULTI-LAYERED PROTECTION

Buried Cable

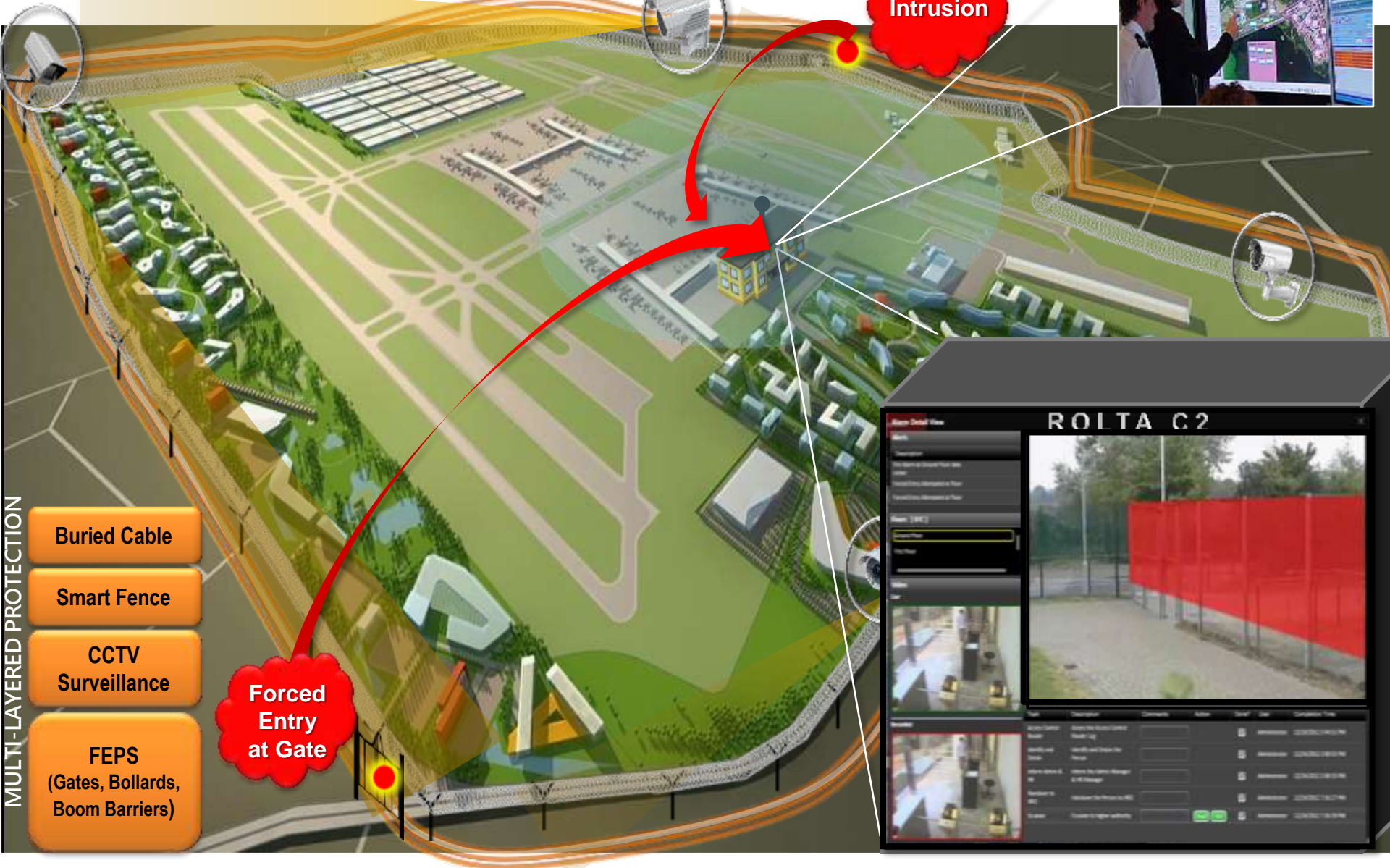
Smart Fence

CCTV Surveillance

FEPS
(Gates, Bollards, Boom Barriers)

Forced Entry at Gate

Perimeter Intrusion



- User friendly easy to use displays

- Rollup to high level situational awareness

- Scalable, Modular and Open architecture
 - Standardized interfaces
 - Network centric, Unified Operation
 - Commercial-off-the-shelf (COTS) components
 - Customizable to meet customer expectations

- Robustness - Designed to accommodate a 24x7x365 application with minimal downtime

- Comprehensive and single point maintenance



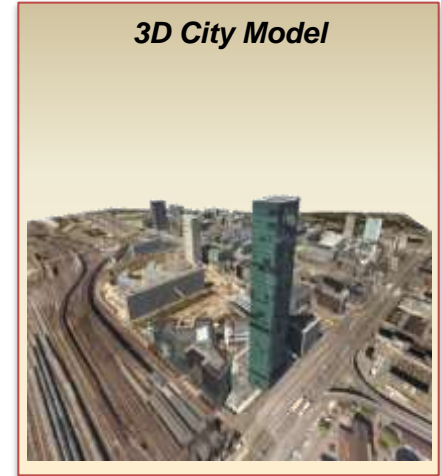
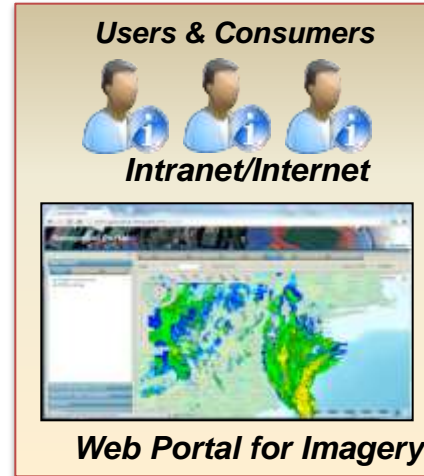
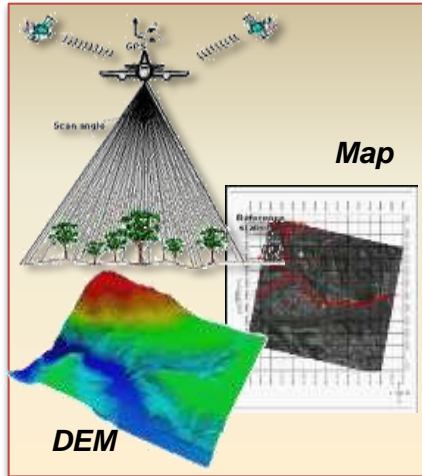
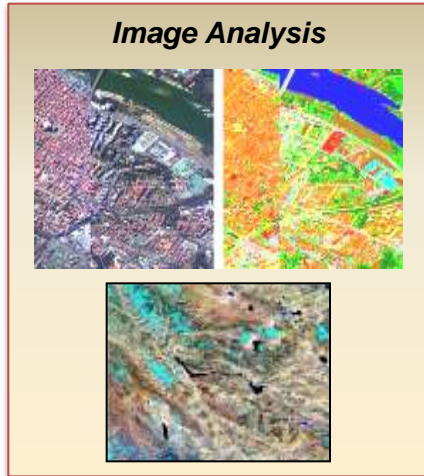
Recording and Debriefing

- Record all sources on site
 - Audios, videos, computer screens and data networks
 - Continuous recording (24/7, data & meta-data)
- Replay all sources synchronously
- “On-the-fly” analysis (real-time debriefing)
- Large archive, easy search of events (bookmarks)



Recording and Debriefing System for Multi-System Environments

Rolta MOTS – State-of-the-art products & solution in GIS, Imaging & Photogrammetry for Forces, Civil and Commercial markets



Imaging

Photogrammetry

Enterprise GIS Solution

Terrain Analysis & Visualization

- Solution works with Various Satellite/ Aerial/ Radar Sensors, GPS data etc
- Panshrapening.
- Big Tiff Support
- Image Cataloging, Indexing & Sharing

- Images
- CreatTerrain Data created from Stereo Satellite & Aerial e fine elvation models, contours etc.
- 3D Featuree Extraction and Mapping

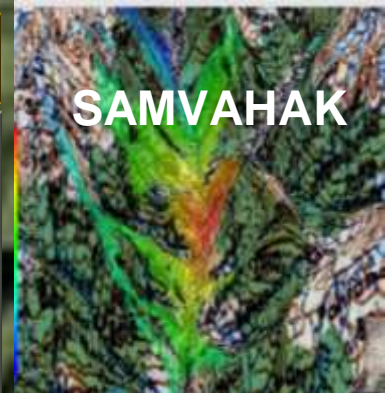
- Creation & distribution of GIS, Imagery, elevation data
- Seamless ingestion and fusion of Geo data from different agencies
- Web / Local Intranet based server

- Generation of Slope / Aspect Maps
- Create shaded relief for better visualization.
- 3D Flythrough for realistic latest view
- 3D City Model Creation

Major Defence & Security Projects

Why Rolta

- **175+ Military (static & mobile) systems for Army and Navy**
- **IDS Tri-services (Army/Navy/Air Force) C2 Solution for Joint Operations**
- **DRDO – Dissemination of Strategic Operational Information in a Command theater**
- **Indian Army – Decision Support System for operational functions in a Corps zone**
- **Indian Army – Military Operations planning & briefing solution**
- **Indian Navy – Naval Operations planning & briefing solution**
- **Indian Army – Counter Insurgency & Terrorism (CI/CT) Ops planning and wargaming**
- **DRDO – Constructive simulation solution for conventional Wargaming**
- **Paramilitary Forces – Military GIS for Border Security tactical operations**
- **Indian Army – Unit level Tactical GIS**
- **DRDO – Missile Navigation planning system**
- **Indian Army – Engineer GIS (EGIS)**
- **Crime and Criminal Tracking Network and Systems (CCTNS) - Mizoram, Manipur, Arunachal Pradesh,**
- **Mission Critical Communication**



The only private company to have executed diverse military projects with indigenous technologies

Rolta Defence and Security IPs



S.No	Name of IPs	Registration Number
Security		
1	Rolta GeoCAD	SW-7635/2014
2	Rolta GeoCAD Web	SW-7636/2014
3	Rolta GeoCAD Mobile	SW-7730/ 2014
4	Rolta GeoCAD-MDT (Mobile Data Terminal)	SW-8116/2014
5	Rolta GeoCAD Emergency Medical System (REMS)	SW-7333/2013
6	Rolta Call Taker	SW-8822/2016
7	Rolta Dispatcher	SW-8768/2016
8	Rolta Supervisor	SW-8816/2016
9	Rolta Resource Manager	SW-8724/2016
10	Rolta Unified Communication	SW-8811/2016
11	Rolta Multi Agency Gateway	SW-8729/2016
12	Rolta Multi Site Manager	SW-8769/2016
13	Rolta Crime Analytics	SW-8728/2016

S.No	Name of IPs	Registration Number
Security		
14	Rolta Suraksha	SW-8863/2016
15	Rolta GeoCAD Fire Emergency Response System	SW-8815/2016
16	Rolta Vessel Traffic Management System	SW-7733/2014
17	Rolta Command & Control - Coastal Security	SW-8843/2016
18	Rolta Security Administration	SW-8766/2016
19	Rolta Security Operator Console	SW-8820/2016
20	Rolta Security Mobile	SW-8752/2016
21	Rolta Security Dispatcher	SW-8726/2016
22	Rolta Security Video Management	SW-8763/2016
23	Rolta Security Sensor Integration	SW-8831/2016
24	Rolta Command & Control - Critical Infrastructure	SW-8800/2016
25	Rolta Command & Control - Coastal Security	SW-8843/2016

Rolta Defence and Security IPs



S.No	Name of IPs	Registration Number
C2ISR		
26	Rolta Photogrammetry Suite	SW-7640/2014
27	Rolta Photogrammetric Nucleus (RPN)	SW-7502/2013
28	Rolta Automatic Elevation (RAE)	SW-7497/2013
29	Rolta DTM collection (RDC)	SW-7504/2013
30	Rolta Base Rectify (RBR)	SW-7503/2013
31	Rolta Digital Mensuration (RDM)	SW-7505/2013
32	Rolta IRS Sensor	SW-7506/2013
33	Rolta Terrain Analyst (RTA)	SW-7501/2013
34	Rolta Software for Walkthrough (RSW)	SW-7500/2013
35	Rolta Terrain TIN	SW-8864/2016
36	Rolta Terrain GRID	SW-8830/2016
37	Rolta Walkthrough	SW-8821/2016
38	Rolta Walkthrough Viewer	SW-8722/2016
39	Rolta Walkthrough -Stereo	SW-8484/2015
40	Rolta Basic Image Process (RBIP)	SW-7729/2014
41	Rolta Advanced Image Analysis	SW-8483/2015

S.No	Name of IPs	Registration Number
C2ISR		
42	Rolta Aerial Reconnaissance Photo Interpretation & Analysis (RAIRS)	SW-7499/2013
43	Rolta Basic Nucleus Module (RBN)	SW-7498/2013
44	Rolta Projection Management (RPM)	SW-7215/2013
45	Rolta Analyst (RA)	SW-7220/2013
46	Rolta GIS Set-up Tool (RGIS)	SW-7219/2013
47	Rolta Advanced GIS (RAG)	SW-7218/2013
48	Rolta Base GIS (RBG)	SW-8028/2014
49	Rolta Grid Analysis (RGA)	SW-7217/2013
50	Rolta Network Analysis (RNA)	SW-8027/2014
51	Rolta Map Finishing	SW-8141/2014
52	Rolta Automatic Line Following Raster To Vector	SW-8485/2015
53	Rolta Automated Image Pre Process (RAIPP)	SW-8463/2015
54	Rolta DEM Editor (RDE)	SW-8727/2016
55	Rolta Automated Photogrammetry and Terrain Display (RAPID)	SW-8764/2016
56	Rolta Atmospheric Correction	SW-8812/2016

Rolta Defence and Security IPs



S.No	Name of IPs	Registration Number
C2ISR		
57	Rolta Pan Sharpening	SW-8779/2016
58	Rolta Automated Change Detection	SW-8488/2015
59	Rolta Change Detection Preprocessing	SW-8835/2016
60	Rolta Optical Change Detection	SW-8765/2016
61	Rolta SAR Change Detection	SW-8810/2016
62	Rolta Object Detection	SW-8755/2016
63	Rolta IMINT Generator	SW-8866/2016
64	Rolta GXL	SW-7264/2013
65	Rolta Satellite Base System	SW-8782/2016
66	Rolta Satellite Ortho Rectification	SW-8746/2016
67	Rolta Aerial Base System	SW-8758/2016
68	Rolta Aerial Ortho Rectification	SW-8770/2016
69	Rolta GXL PAN Sharp	SW-8749/2016
70	Rolta Cloud Detection and Haze Removal	SW-8844/2016
71	Rolta DEM Extraction	SW-8753/2016
72	Rolta Mosaic	SW-8748/2016

S.No	Name of IPs	Registration Number
C2ISR		
73	Rolta SAR Processing	SW-8790/2016
74	Rolta Radar Analysis	SW-8823/2016
75	Rolta Radargrammetry	SW-8721/2016
76	Rolta SAR Polarimetry	SW-8778/2016
77	Rolta Hyperspectral Processing	SW-8759/2016
78	Rolta Hyperspectral Data Calibration & Preprocessing	SW-8814/2016
79	Rolta Hyperspectral Atmospheric Correction	SW-8845/2016
80	Rolta Hyperspectral Analysis	SW-8813/2016
81	Rolta SAR Polarimetry Workstation	SW-8747/2016
82	Rolta Geomatica Discover	SW-8832/2016
83	Rolta e-GIS (Engineering GIS)	SW-7259/2013
84	Rolta Minefield Burial System (RMBS)	SW-7260/2013
85	Rolta Minefield Recording System	SW-7261/213
86	Rolta Geomatica Core	SW-7262/2013
87	Rolta Geomatica Prime	SW-7263/2013

Rolta Defence and Security IPs



S.No	Name of IPs	Registration Number
C2ISR		
88	Rolta Enterprise GIS Portal (REGISP)	SW-7695/2014
89	Rolta Enterprise GIS Web Server	SW-8723/2016
90	Rolta 2D Map Viewer	SW-8842/2016
91	Rolta 3D Map Viewer	SW-8750/2016
92	Rolta Geospatial Military SDK	SW-8751/2016
93	Rolta Analysis ProSDK	SW-8877/2016
94	Rolta Offline Map Client	SW-8862/2016
95	Rolta Joint Services Orbat	SW-8847/2016
96	Rolta Joint Services Ops Planner	SW-8833/2016
97	Rolta Joint Services Decision Support System	SW-8846/2016
98	Rolta Wargaming SDK	SW-8865/2016
99	Rolta Logistics Management	SW-8834/2016
100	Rolta Ops and Int Planner	SW-8725/2016
101	Rolta Dynamic Wargaming	SW-8868/2016
102	Rolta Airphoto Ortho Suite	SW-8867/2016

S.No	Name of IPs	Registration Number
C2ISR		
103	Rolta Satellite Ortho Suite	SW-8855/2016
104	Rolta Radar Ortho Suite	SW-8853/2016
105	Rolta Ortho Production Toolkit	SW-8754/2016
106	Rolta Auto DEM	SW-8757/2016
107	Rolta GIS Framework (RGISF)	SW-8767/2016

- Understand

- Customizable/ Scalable

- Innovative Solutions for Insightful Impact

- Indigenous Products with Complete IPs

- Extensive Knowledge

- Good practices

- Make In India

Diversified innovative technologies available for
Defence & Security Forces Management

No single Technology is unique to meet the challenges

To minimize security threat, Multi-Sensor Technology
with Multi-Layer approach is recommended

Unification of Multi-Sensor input can be best achieved
through modern Command and Control Systems

Solution can be customized based on end users
requirements for ease of use, better user experience

Conclusion

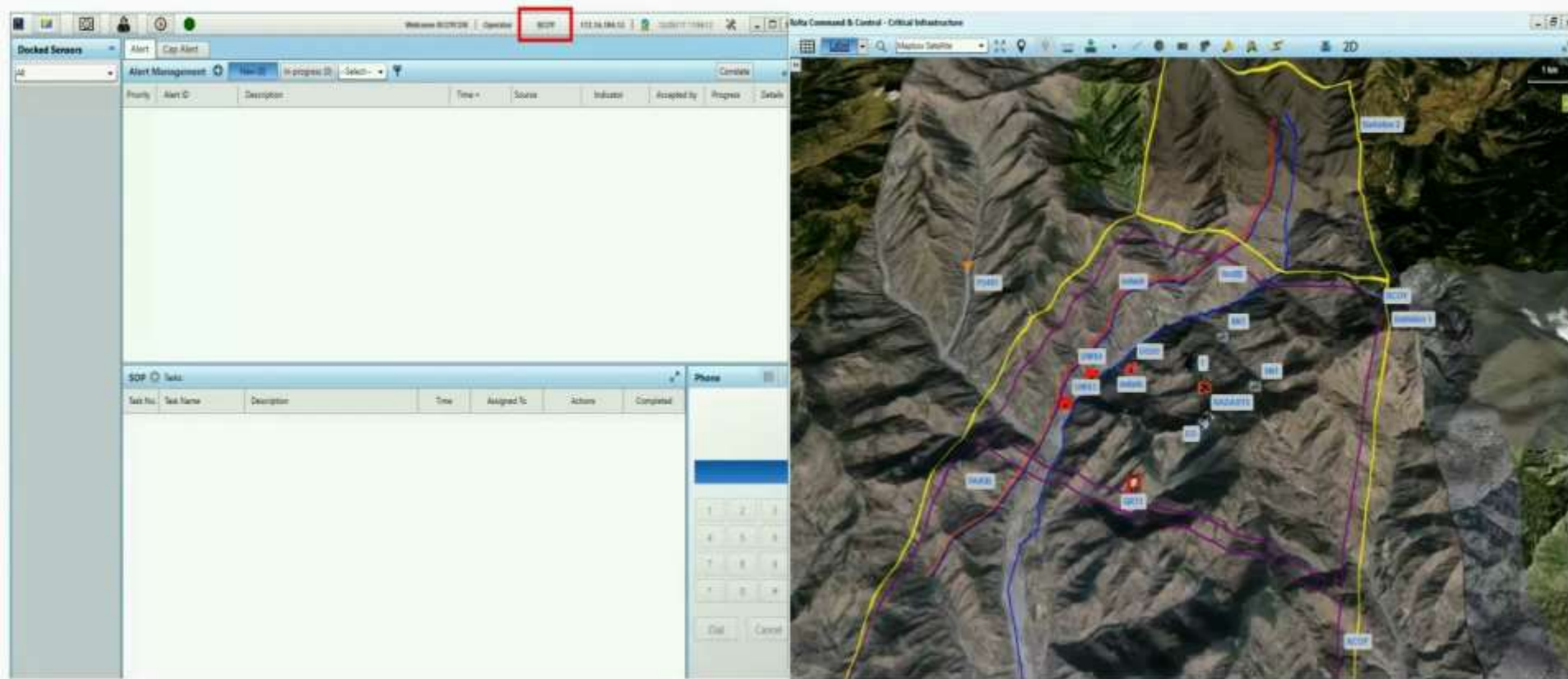




Rolta Border Security Solution

- **[Product Demo Video](#)**

Rolta Border Security Solution





Thank You