Broader OSS Project — WBS 1

Data Gathering & Requirement Specification — WBS1.1
- Define Scope & Dimensioning data
- Prepare PMP
- Define budget
- Define preliminary schedule
- Define List of Services
- Define Key Service Criteria
- Understand Regulatory Reqs
- Understand Key Stakeholders
- Understand Partnership models
- Define stakeholder RASIC
- Understand proposal framework
- Prepare proposal
- Understand Dependencies
- Single/multi service providers??
- Future outlook (eg de-regulation)
- De-Centralised Infrastructure??
- Identify Revenue Streams
- Understand master planning zones

Establish Project Office — WBS1.2
- Third-party coordination board
- Infrastructure (eg office-space, PC, etc)
- LAN/WAN/Apps
- Infrastructure (eg office-space, PC, etc)
- Issues Log
- Progress Reports
- Change Mgmt
- Site Visits
- Factory Visits
- Workshops
- Scheduling
- Document Library
- Meetings Register
- Setup mail accounts
- Accommodation
- Project Org Chart
- Human Resource Allocation
- Project Sponsor
- Financial/ Cash-flow projections
- OH & S Planning
- Environmental Impact Planning
- Identify Funding Stuctures
- Project Monitor & Control

Needs Analysis & Tender — WBS1.3
- Document Scope
- Define Requirements
- Market Research / Forecasting
- Break into work packages (WBS)
- Define Roles & Resp (RASIC)
- Prepare Functional Specifications
- System Concept
  - Environmental Plan
  - Services Catalog Concept
  - Technology Concept
  - Feasibility Study & Deliverables
  - Infrastructure Concept
  - Delivery Model
  - Operating Model
  - Execution Plan
- Define Operational Model
- Define Delivery Model
- Prepare SoWs for each work package
- List Dependencies
- Define High-Level Design
- Define ownership/ mgmt of infrastructure
- Service Bundling Models
- Define Deliverables
- Prepare Preliminary Timeline
- Prepare Preliminary BoQ
- Prepare Tender Documents
- Training Plan
- Application Interface Specifications
- Test Plan
- Develop Tender
- Evaluation criteria/ matrices
- Conduct Tender Process
- Evaluate Tender Responses
- Develop Supplier Contracts
- Develop Implementation Plans

Design (Security & Telco) — WBS1.4

Telco - Passive Network (External Engi) — WBS 1.4.1
- Pit & Pipe Network
- Optical Fibre Backbone
- Distribution network (eg GPON, etc)
- Surveying
- GIS logging
- Site Selection
- PoP locations
- Data Centre Locations
- Node Locations
- Easement / Corridor / RoW Mgmt

Telco - Core/ Transmission — WBS 1.4.2
- Transmission (SDH, DWDM, etc)
- Distribution (eg xDSL, MPLS, VPLS, etc)
- PoPs
- Nodes
- Carrier Interconnect

Telco - IP Data Network — WBS1.4.3
- Network Traffic Modeling
- Converged Network
- Firewall
- IDS / IPS
- DCN for NMS/OSS
- OOB Mgmt Network
- Network Addressing

Telco - IP Wireless — WBS1.4.4
- WAPs
- IP WiFi Phones

Telco - IP Telephony — WBS 1.4.5
- Call Manager Sys (CMS)
- Teleconferencing
- PSTN / Carrier Links
- IP Phones
- ATA
- Soft Phones (S/W)
- Survivable Facilities
- Unified Messaging
- Billing Server
- Fax Server
- LDAP and AD
- Interactive Voice Recognition
- GSM Gateway
- eFax

Telco - Fixed Telephony — WBS1.4.6
- PABX / Voice Switch
- PSTN / Carrier Links
- Analog Phones
- Emergency Phones
- Hotline Phones

Telco - IP TV — WBS 1.4.7
- SMATV / CATV
- Middleware Servers
- Content Sources
- Digital Rights Mgmt
- STBs / PVRs
- VoD servers
- Streamers / Transcoders

Telco - Mobile Communications — WBS 1.4.8
- GSM
- 3G
- EDGE
- WiMAX
- TETRA
- Transmission Towers
- Base Stations
- Backhaul
- Indoor reticulation of services

Telco - Audio / Visual — WBS 1.4.9
- Paging and BGM
- A/V Control Room
- A/V Help Desk

Telco - Master Clock System — WBS 1.4.10
- GPS Receiver
- Master Time Server

Telco - Carrier / Service Provider Interfaces — WBS 1.4.11
- Licences
- Point of Interconnect
- Service Offering
- Sales & Billing models

Telco - Command and Control Centre (CCC) & NOC (see req centre) — WBS 1.4.12
- Infrastructure / Data Warehouse
- Workstations
- Application Servers
- Storage Area Network (SAN)
- Database / Data Server
- OSS.BSS Portal

Telco - Data Centre — WBS 1.4.13
- IT Infrastructure
- DNS / DHCP / AD
- Storage Area Network (SAN)
- Application Servers
- FTP Server
- Internal Engineering
- Cloud Computing
- Staging Areas
- Layoff Areas

Network Mgmt Sys (NMS) — WBS 1.4.14
- Alarms
- Performance
- Network Traffic Mgmt
- Service Provisioning
- Inventory Mgmt
- CRM & Billing
- CCTV NMS
- Converged N/W Management
- Labeling System
- Database
- Element Managers
- GIS
- Dispatch

Security - Access Control System — WBS 1.4.15
- Door Lock
- Card Reader
- Biometric Reader
- Wireless Access Control
- Gates

Security - IP CCTV — WBS 1.4.16
- Fixed Cameras
- PTZ Cameras
- Camera Controllers
- Web Server
- Intelligent Video (Incl. Detection)
- Fibre Transceivers
- NVRs

Security - Integrated Security Systems (ISS) — WBS 1.4.17

Security - Document Management — WBS 1.4.18

Security – Intercom — WBS 1.4.19

Security – Nurse Call System — WBS 1.4.20

Security - Parking / Screening — WBS 1.4.21
- Car Bottom Check
- Explosive Detector
- License Plate Recognition
- Indoor CCTV
- Outdoor CCTV
- IP CCTV Network (see WBS 1.4.4)
- Voice Gateway

Security – Police Monitoring — WBS 1.4.22

Other - Structured Cabling (and Internal Eng) — WBS 1.4.23
- Structured Cabling
- IDF / BDF Layouts
- Voice/Data Outlets
- Install WAP
- Security access points
- Earthing systems
- Containment (eg tray, conduit, etc)

Other - Network interfaces between systems — WBS 1.4.24
- Nurse Call / System Interface
- Utility Metering Interfaces
- FAS to Fire Suppression
- FAS to HVAC
- FAS to PA
- Intercom System
- Guard Monitoring System
- Remote Monitoring Terminal
- ISS to BMS
- ISS to FAS

Other - Services Catalog — WBS 1.4.25
Other - Public Address System — WBS 1.4.26
Other - Fire Alarm (FAS) — WBS 1.4.27
Other - Building Mgmt Systems (BMS) — WBS 1.4.28
Other - Power Mgmt Systems (PMS) — WBS 1.4.29
Other - Smart Home & Business Automation — WBS 1.4.30
Other - Traffic Control System — WBS 1.4.31
Other - Smart City Systems — WBS 1.4.32

Feasibility / PoC Phase — WBS 1.5
- Contract feasibility study
- Establish Site
- Market Research
- Design Test Architecture
- Engage Third Parties
- Build Test-bed
- Performance Testing

Procurement — WBS1.6
- Identify & contact vendors
- Prepare Build List
- Lead Times / Delivery Dates
- Warehousing?
- Spares
- Inspection / Certification?
- Transport / Customs??
- Bar-code / ID / Inventory??
- UPS / Power
- Shop Inspection

Project Construction — WBS1.7
- Documentation
- Drawings
- Schedules
- Sub-contractor Mgmt
- Change Mgmt
- Risk Mgmt
- Escalation
- Progress Reports??
- Develop Application Business Processes??
- Site Office
- Staff Mobilisation
- Other Logistics

Testing — WBS 1.8
- Acceptance test criteria
- Prepare Test Cases
- Conduct Testing
- Establish FAT environment?
- Release Mgmt ??
- Defect Tracking??
- Stress / Load Testing??
- Testing with existing Live Systems??

Deployment — WBS 1.9
- See schedule & PMP for details
- Third-party coordination board
- Management of vendor deployments

User training — WBS 1.10
- Develop Training Plan (vendors??)
- Deliver to Normal Users
- Deliver to Admin Users
- Deliver to Help-desk staff??
- Develop training materials
- Skills Transfer
- Resident's Training?
- Business training?

Handover — WBS 1.11
- Cutover Notifications
- Communications Plan??
- Vendor User Manuals??
- Customised User Manuals?
- Business Process Docs??
- Help Desk Scripts??
- Warranty Docs
- Post Implementation (Warranty) Review
- Support
- Maintenance
- Operational Handover??
- Service / Operations Contracts??
- Setup of Help-desk??

Scope TBC — WBS 1.11
- Telco Service Contracts
- Third Party Telco Reqs
- Which buildings?
- Understand corporate process & paperwork
- Understand regulatory
- Establish Help-Desks
- Supply of equipment