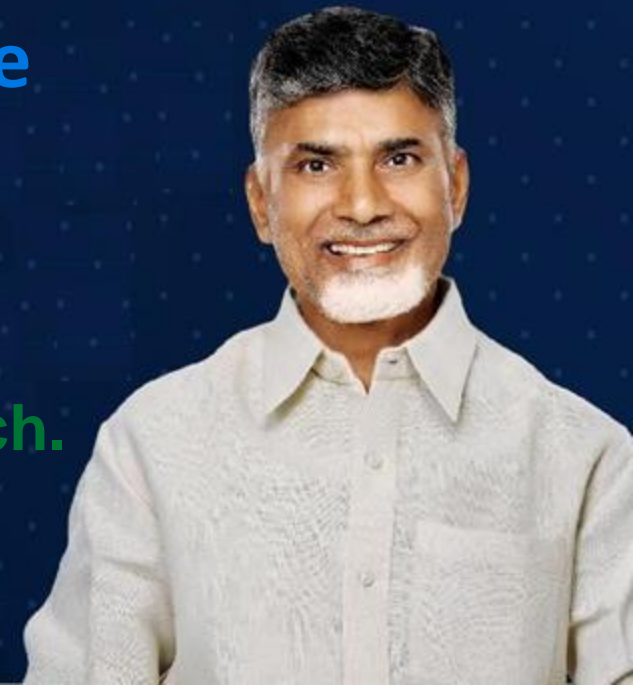


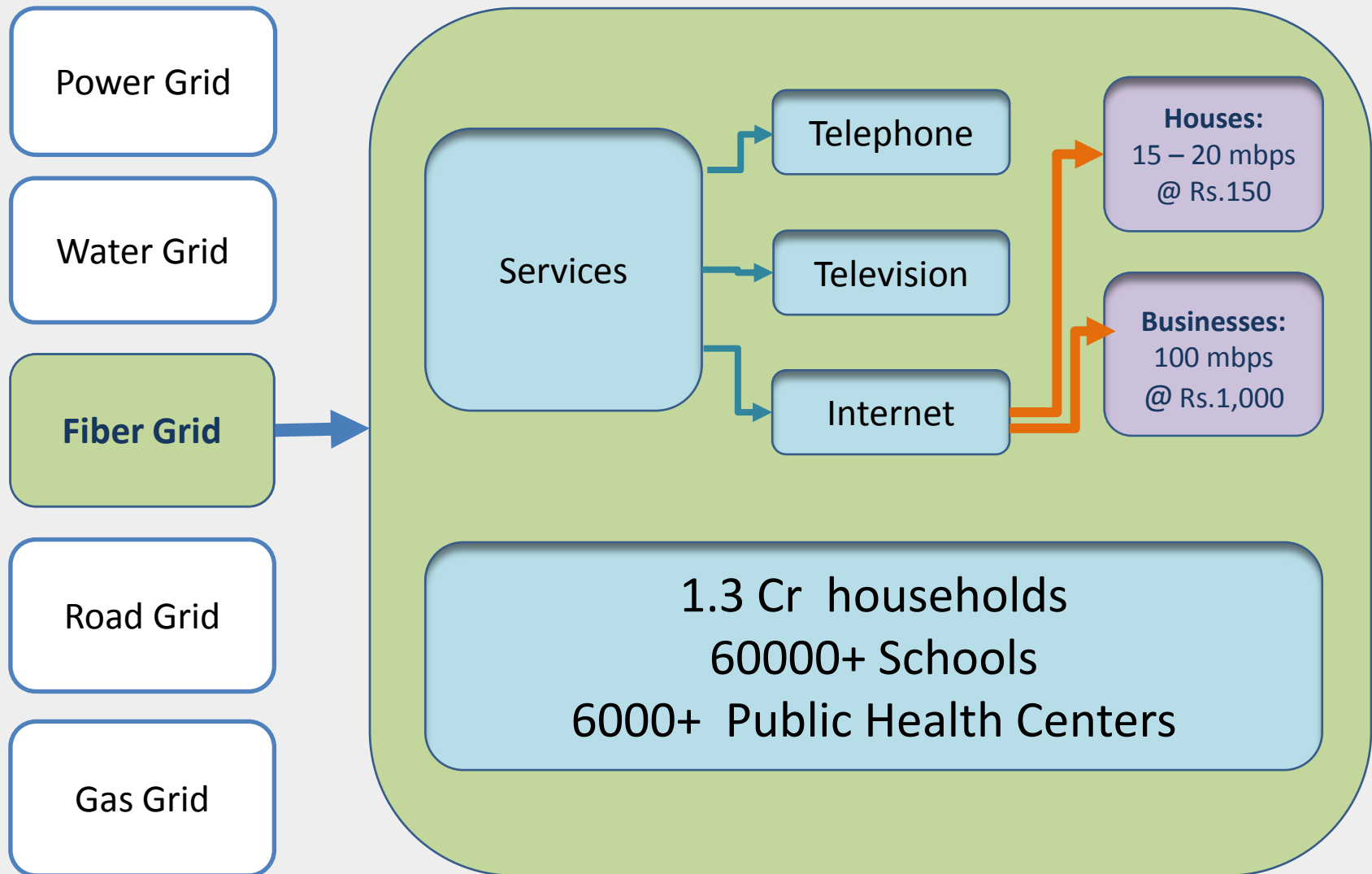


## AP Fiber Net – Initiatives in the Medical and Health Sector

**Atluri Rama Rao**  
**Executive Director Tech.**



# THE THOUGHT



61000 KMS of Underground cable in association with NOFN using USO funds

**Estimates:** Total Rs 4700 Crs (Rs 3800 Crs from Central + Rs 900 Crs from State)

**Time Frame:** 2 - 3 years of execution.

**Network Model:** 65 % Ring and 35% Tree Topology

Under pursuance with Central Govt.

## WHAT IS ACHIEVABLE IN 9 MONTHS?

### Fiber Grid - Dual Phase Approach

#### Phase I

Self funded Aerial Fiber on utility poles

#### Phase II

Underground in association with Bharatnet

# AVERAGE INTERNET CONNECTION SPEEDS

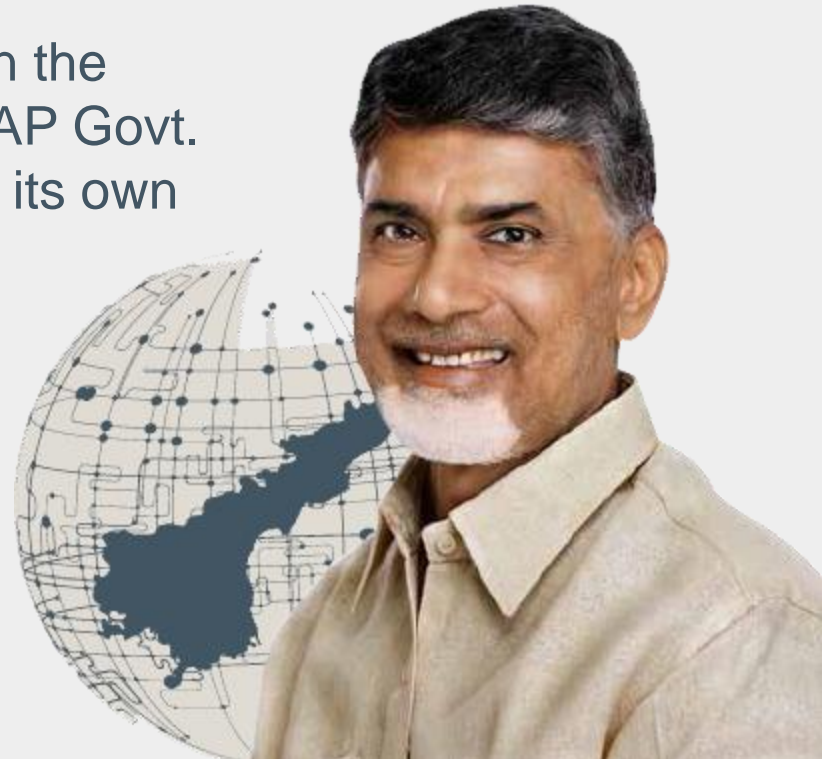


S #	Country Name	Speed (in Mbps)
1	S. Korea	26.7
2	Sweden	19.1
3	Norway	18.8
4	Netherlands	17.0
5	Japan	17.4
	Global	5.6
	India	2.8 (Global Rank 114)

*Source: Akamai, Q4 2015*

# WHY FIBER GRID?

- Big Challenge before the policy makers - How to penetrate broadband into rural India?
- Unless this is addressed, ambitious projects like Digital India, e-Governance etc. to benefit common man may remain distant dream.
- In view of huge costs/timelines involved in the BharatNet program of the Govt. of India, AP Govt. pioneered aerial route of Optical Fiber on its own to realize the dream of Digital AP
- Thus born the AP Fiber Grid out of the Vision of **Sri N. Chandrababu Naidu**, Hon'ble Chief Minister.



# WHAT IS FIBER GRID?

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- One of the 5 Grids identified to accelerate growth in AP
- Sets up a high speed Aerial Optical Fiber Cable (22,000 Kms) network infrastructure across the 13 Districts in the State, leveraging the electrical utility assets.
- Aims to provide at least 15 Mbps broadband connections to households and at least 100 Mbps to offices on demand at highly affordable price (Basic package at Rs. 149 for triple play services)
- Enables provision of a host of other services such as CableTV/IPTV, Telephone, Videos on Demand, Content & Cloud Services etc.
- Last Mile Services will be delivered through local players – LCO/MSOs through 2449 Point Of Presence, Controlled at Network Operations Center

# FIBERGRID IN NUMBERS



- No. of electrical poles **3.75 Lacs**
- Reach with in 5 kms radius
  - **1.1 Cr households,**
  - **50,000+ Schools**
  - **5000+ Public Health Centers**
  - **10,000+ Telecom Towers**
  - **10,000+ Govt. Offices**
  - **Network Capacity 1.3 TB**

Clamps	: 4,68,920
Splicings	: 11,725+
Fiber Cable in Kms	: 22,000+
POPs	: 2,449+
Total No. of Man Days	: 1,87,568+



# THE RAPID ROUTE PLAN



NREGS – 2000 Members

Electrical Utility Companies: (SPDCL/EPDCL) – 2500 members

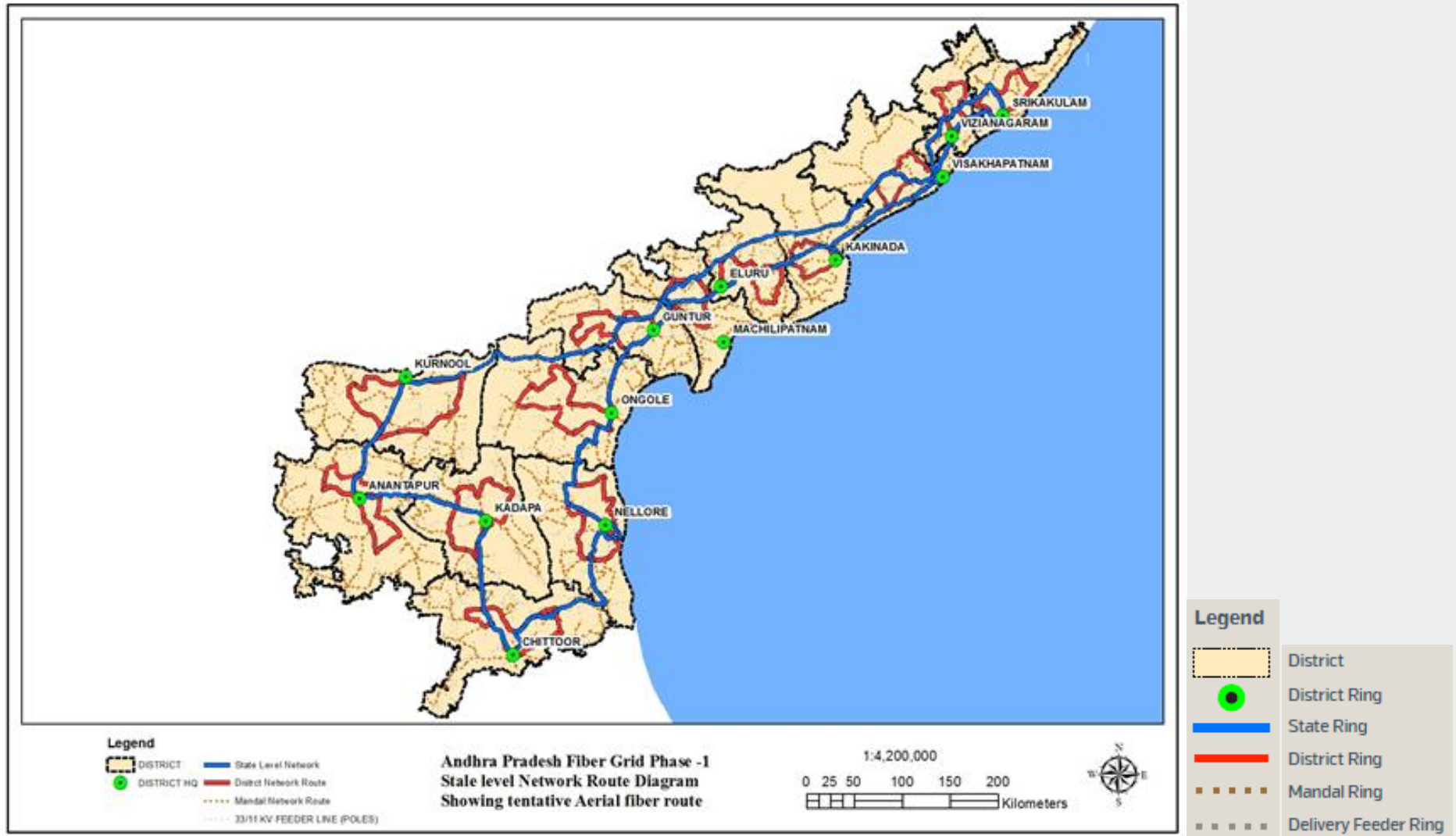
3,75,000 Poles and

2,449 Substations GIS mapped





# AP FIBER - STATE LEVEL NETWORK ROUTE DIAGRAM

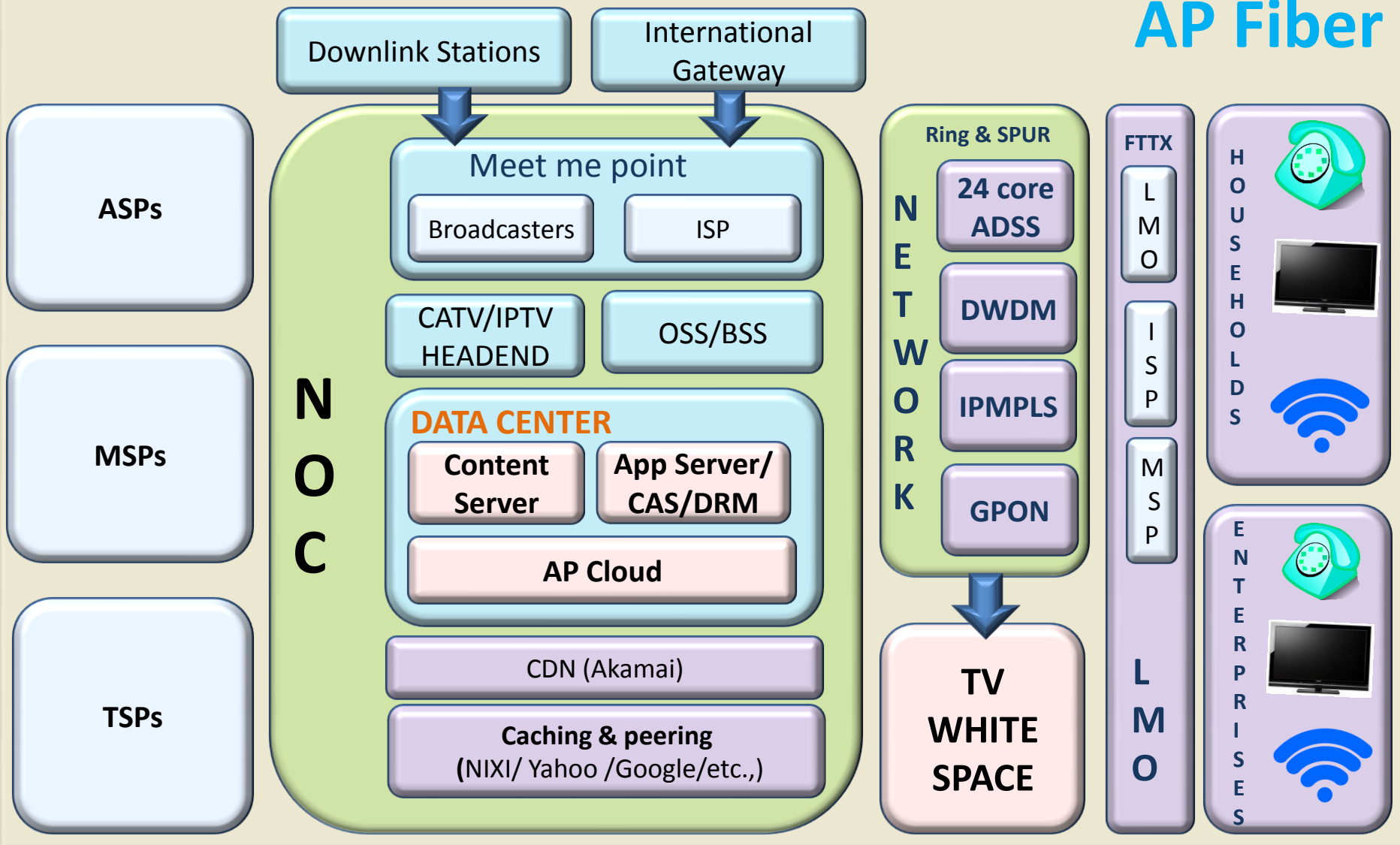


*Andhra Pradesh Fiber Grid Phase - 1 State level Network Route Diagram  
Showing tentative Aerial fiber route*

# AP FIBER - BIG PICTURE



## AP Fiber



# FIBER GRID DESIGN & WORKS - 1



- GIS Mapping of 3.75 Lakh electrical poles & around 2500 substations done in one week time at **zero-cost**
- Taking into the account density of habitations/population, optimal route design has been done
- 55% ring topology achieved through State level, District level, Zonal level and Mandal level rings
- Works commenced in November, 2015 at an estimated cost of Rs. 333 Crs with a target timeframe of 9 months



- 22,000 Kms of Fiber Cable pulled in the last 7 months
- The state-of-the-art Network Operations Center at Visakhapatnam has been completed in a record 3 month's time at a cost of Rs. 40 Crs
- APSFL obtained the following licenses from the Govt. of India
  - Internet Service Provider – Class B
  - National Long Distance (NLD)
  - Unified Access Service License



- Smart Electrical Metering
- AP Data Center / Cloud
- AP Surveillance Cloud
- Digital School & e-Learning
- Digital Clinic /e-Health Care
- AP Towers
- Driving customized content in Education, Health & Agriculture sectors by separate SPVs

- The largest greenfield optical fiber network infrastructure being taken up by any State Govt. agency at present
- Role out of Interactive IPTV services on a big scale
- APSFL – 1<sup>st</sup> TELCO in State Government sector
- 10,000 MSOs/LCOs enrolled so far on their own to be business partners with Fibergrid
- Sets up a high speed communication backbone which is made easily accessible to common man. Can deepen penetration of broadband in rural areas.
- This infra can be leveraged to drive a host of innovative digital services / applications to target groups
- GoI advised other States to study/follow aerial fiber model of AP



# FIBERGRID

## CPE BOXES – SMART METERS

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- Fibergrid can integrate substations / offices of DISCOMs and TRANSCO
- CPE Boxes can enable fiber connectivity to electrical meters in households in an exclusive, managed network; can turn them into smart meters
- 9 types of CPEs – GPON & IPTV boxes are designed for Fibergrid. Estimated cost Rs. 4000+ for triple play
- Allocating funds for the Customer Premises Equipments(CPE) boxes to be deployed at households/offices can bring down cost to the consumer and accelerate Smart Grid Projects.

# FIBERGRID PHASE 1 LAUNCH (17<sup>th</sup> March, 2016)





# FIBERGRID PHASE 1 LAUNCH (17<sup>th</sup> March, 2016)





# FIBERGRID – FIELD WORKS



# FIBERGRID – FIELD WORKS





# FIBERGRID – FIELD WORKS



# FIBERGRID – FIELD WORKS





# FIBERGRID – FIELD WORKS



# FIBERGRID – FIELD WORKS



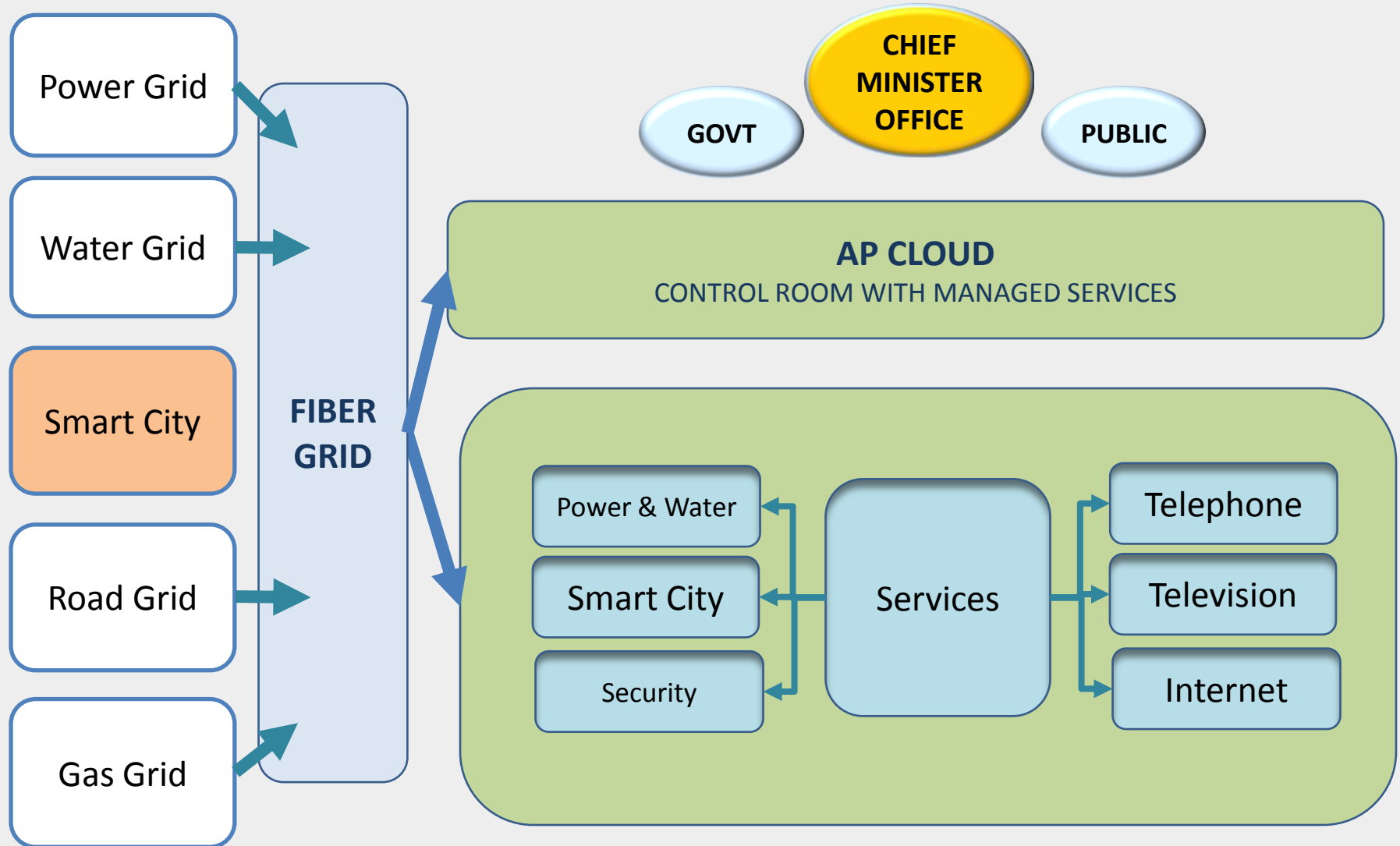
***The Mantra* for GDP growth in  
Andhra Pradesh**

**Technology**

**+**

**Innovation**





# Active Life Health Net Medical Electronics – Role of AP Fiber Net

- Statewide network of Health Service Centers

# APSFL Health Care Services - Goals

- **Mission**

To serve a considerable proportion of the population with easily accessible, affordable medical care of their choice and discipline across the AP state

- **Vision 2020**

- Establish state wide **Health Net Service Centers** to handle twenty thousand consultations per day, via state of the art technology in audio, video and medical devices
- Create a **State Health Service Providers Registry** comprising of AYUSH Doctors, Physiotherapists, Pharmacists and Para medical staff in AYUSH to cover 1 million professionals
- Provide **Active Life Electronic Health Record Transactions** to 1 crore users
- Impart job oriented **HealthCare Training Modules** in Electronic Health Records, Health Networks, Telemedicine based practices, Medical Counseling, Medical Coordination, Medical Tourism etc to one million youth
- Enable building of **IT based HealthCare Services**
- Enable **Turnkey IT Solution Projects** in Healthcare sector including Health Care Exchanges, Health Information Access Layers, Integrations across Health Providers, practice oriented EHRs, User Experience Enhancement in HealthCare, Visualization in HealthCare Data, Big Data Analytics

# Health Services Business Platform



Health Information Access Layer, Health Information Exchange, Patient Discovery, Co-ordinated care across Public/Private Orgs, Query/Retrieval of eHR info, Visualizations, Turnkey Solutions, eHR System integrations

Citizens Portal

( Hospitals  
+  
Doctors  
+  
Para Medicals  
+  
Physiotherapists  
+  
Technicians  
+  
AYUSH)

Health Care Training Modules

Health Analytics  
Patient Demographics, Population Health Mgmt

Disease Management Programs  
(Diabetes, Obesity, Lipid Profile, Thyroid, Cancer,...)

Sector Based Health Programs  
(Schools, Corporate, Apartments, PSUs, Govt Bodies)

Tele Medicine  
(State of the Art Audio, Video and Medical Devices )

Active Life Electronic Health Record Transactions  
( eHR, ALERTS, Storage Services, Patient Portals, Provider Dashboards, )

Smart  
Health Net  
Service Centers

Rural and  
Urban  
Franchise based  
Retail Medical  
Centers

- A **cooperative** network of Hospitals, Labs , Diagnostic Centers and Clinics willing to
  - Share Patient 's Electronic Health Records to ensure smooth transactions ,minimum travel & maximum ease to the patients
  - Participate in the health transactions and referrals across
- Any facility participating in the Health Net is called Health Service Center, which is a professional health service delivery point eg. Primary Health Care Center
- Health Net provides a platform to integrate data from disparate IT systems of the Hospitals and Health Provider institutions
- Health Net facilitates with state of the art audio and video connectivity and connects two or more entities (eg. Hospitals and Labs) to service a single client (patient)
- If a patient leaves his treatment trails across the Health Net Service Centers, consolidation of all his medical details is possible and is a great input for decision support systems
- Patient never needs to worry about his records, medications, allergies, prescriptions as long as he moves across the Service Centers within this Health Net

# Advantages of Health Net to Patients

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- Patients can consult with their choice of doctors from their choice of hospitals at their nearest centers
- Patients can save their valuable time and money in traveling to the hospitals, and round trips to the Labs – they can perform the entire cycle at a single location
- Patients can choose to consult the doctors of their choice based on their community and the language
- Patients can chose to participate in Disease Management Programs so that their chronic diseases are tracked and alerts are sent

# Benefits of Shared Electronic Health Record System

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- Patient Benefits
  - Maintain comprehensive online record for health providers
  - Provide timely and accurate information for care
  - Reduce duplication of tests and treatment
- Clinician Benefits
  - Enable efficient and quality assured clinical practice
  - Reduce errors associated with paper records
- Society Benefits
  - Improve disease surveillance and monitoring of public health
  - Help gather more comprehensive statistics for formulating public health policy
  - Bring efficiency gain in total health expenditure

## APSFL Tele Medicine

- Any Time Medicine - Practice Areas and Applications



# Healthcare On the Go...

## Cloud Meetings For unlimited Possibilities



Tablet and Mobile

Doctors and Patients can contact each other from Homes or on the go

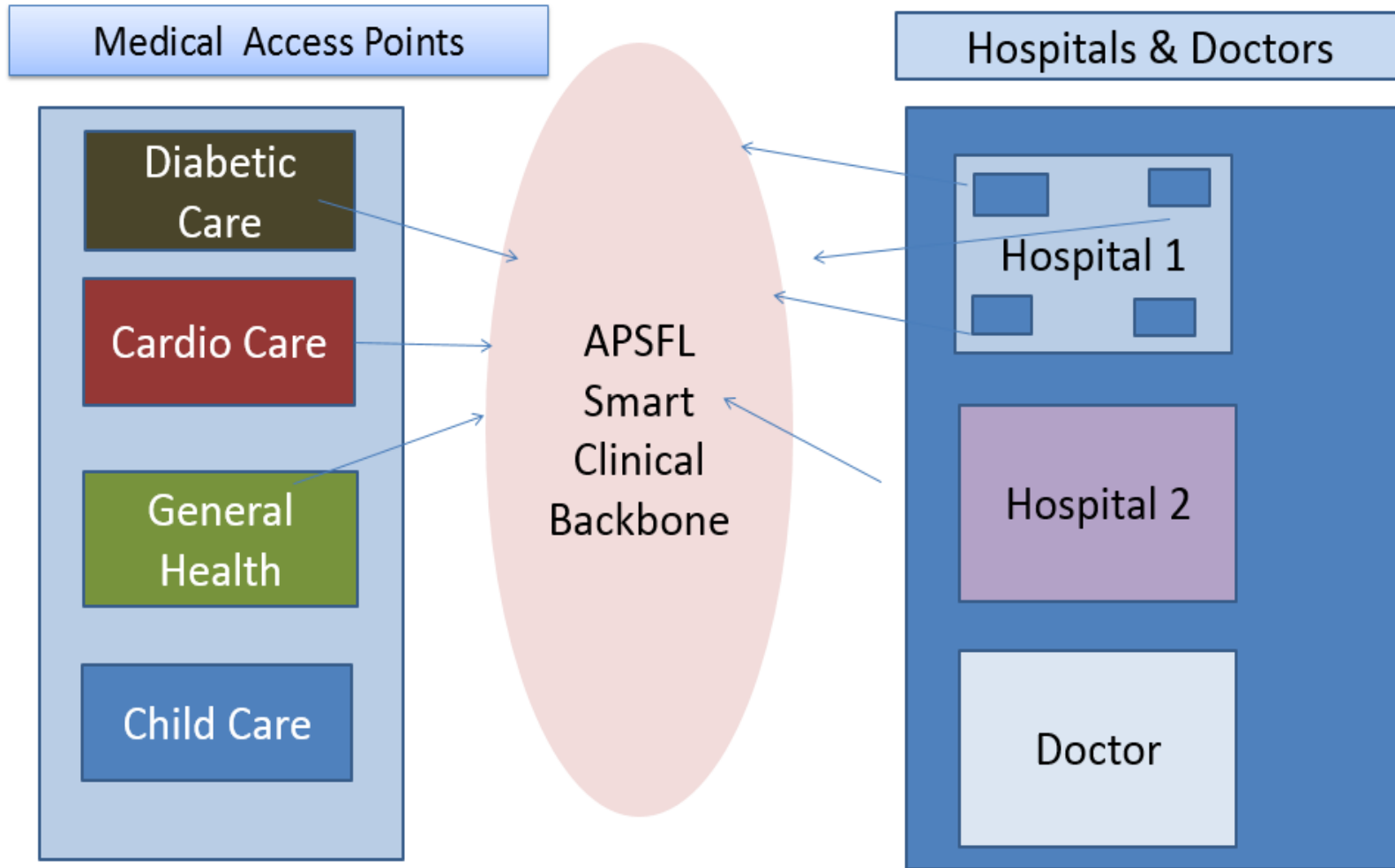
Desktop and Laptop

Doctors and Patients can attend from their workspace

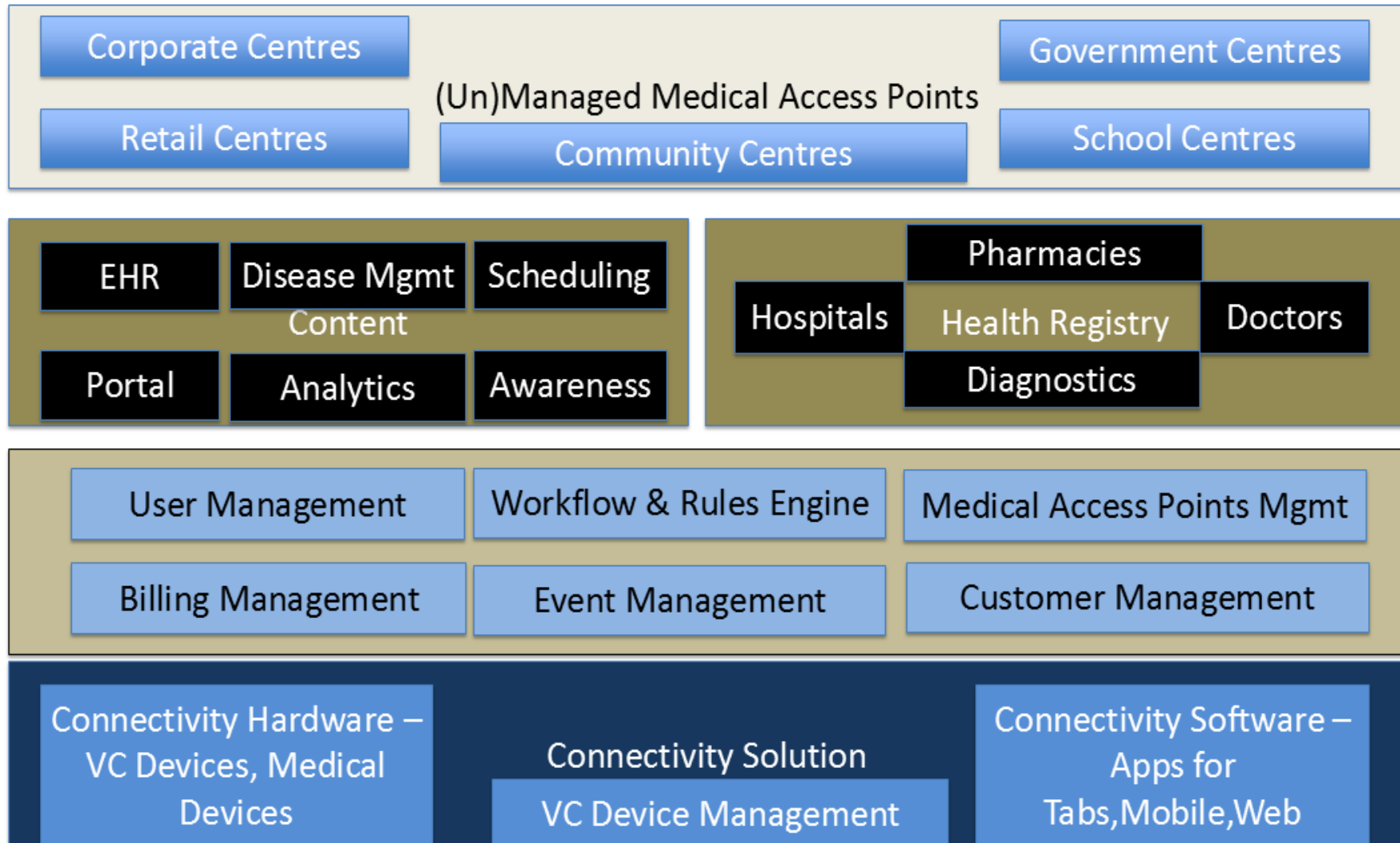
Conference Rooms

Patients can attend from Managed Medical Access Points

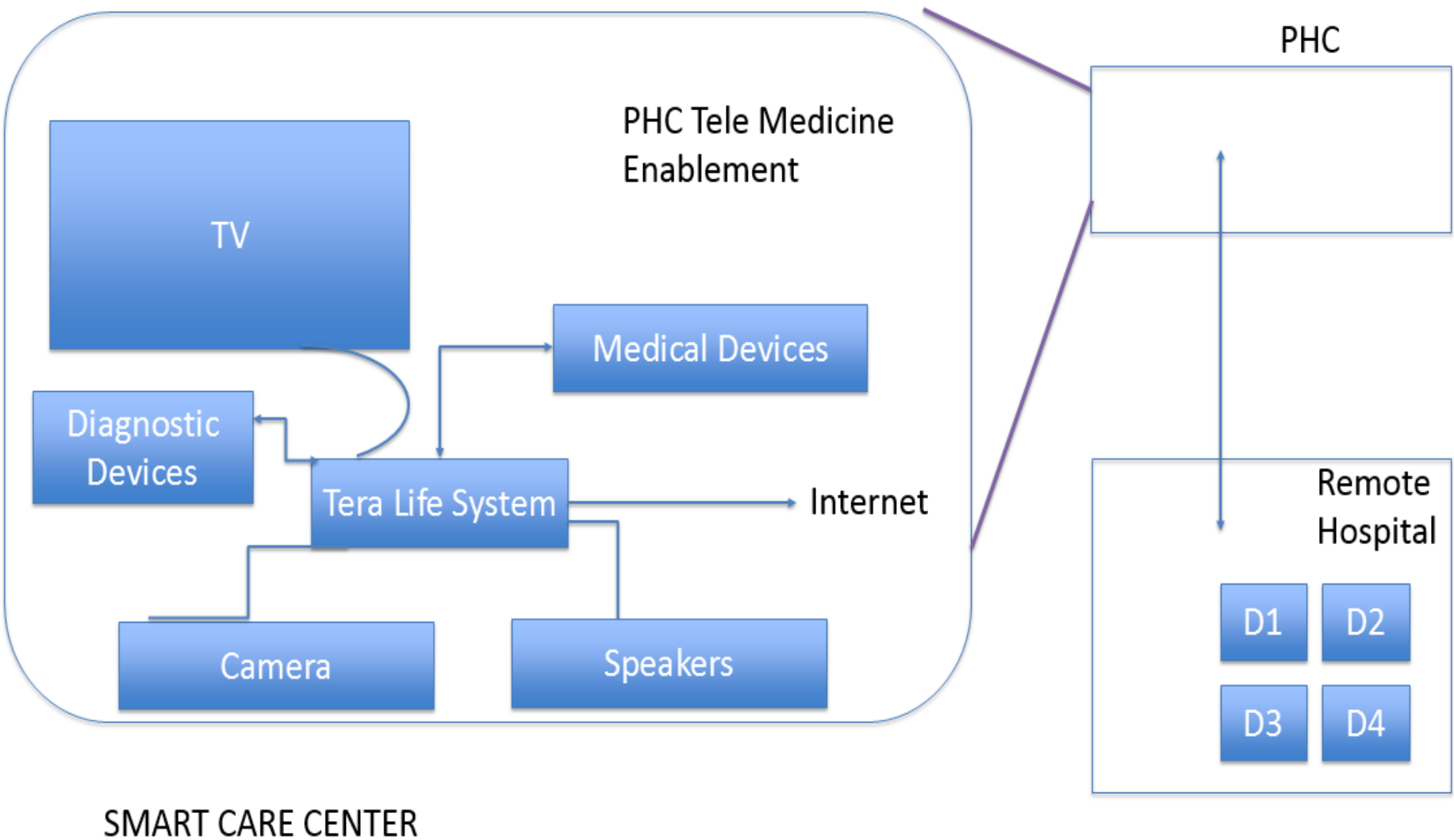
# Business Models Supported



# APSFL eHealth Fabric



# Smart PHC by APSFL



# HealthCare Training Programs

- For Medical and Non Medical Professionals

# Training Opportunities on Healthcare Network

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- Students in Teaching Hospitals
  - Connect to the world class hospitals for live demonstrations
  - Online Robotic Surgical Demonstrations and live instructions
- For Working Medical Professionals
  - Continued Medical Education Programs
  - Medical Conferences and Events
- Skill Development Programs in Telemedicine
  - Paramedical Staff Training on Telemedicine Etiquette
  - Telemedicine Health Coordinators
  - Telemedicine Program Managers

Thank You