



# Smart & Secure Networks- Smart City

|Secure| |Intelligent| |Automated|

**Abhishek Kumar**  
**Regional Sales Lead**

# Allied Telesis Group

Established in 1987- Headquartered in Japan

37 group company in 24 countries around the world

Global R&D Facilities- USA, Japan, India, New Zealand,  
Taiwan, Israel, Singapore

Global Manufacturing Facilities- Singapore, Indonesia,  
China & Taiwan

Global Sales Location-65

**VISTA**  
MANAGER

**AMF**<sup>™</sup>

**AWC**



# Allied Telesis Recognition



- Featured in latest Gartner Magic Quadrant for wired and wireless Access
- 6<sup>th</sup> position in Global Market,
- Allied Telesis is 2<sup>nd</sup> fastest growing brand for consecutive 2 years
  
- Lead Member into Smart City Council
- Allied Telesis Goal : Plug & Play + Secure Platform

## Other Members



# Allied Telesis Portfolio “end-to-end” connection

Ethernet Switches



Industrial Ethernet Switch



Firewall Router



FTTx



Media Converters



Wireless



Network Adapters



Optical Modules



Management and automation

VISTA MANAGER EX **AMF™** **AMF-Sec™**  
VISTA MINI™ **AMF-WAN™**  
**AWC™** **AWC-CB™** **AWC-SC™**

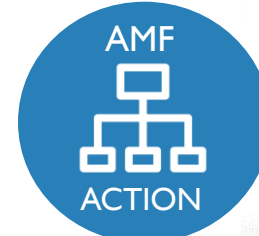
Support and Service

**Net.AMF** **Net.Cover**  
**Net.Assist** **Net.Monitor**  
**Net.Pro** **Net.Campus**

# Industrial Edge Switch- Smart City Edge Network

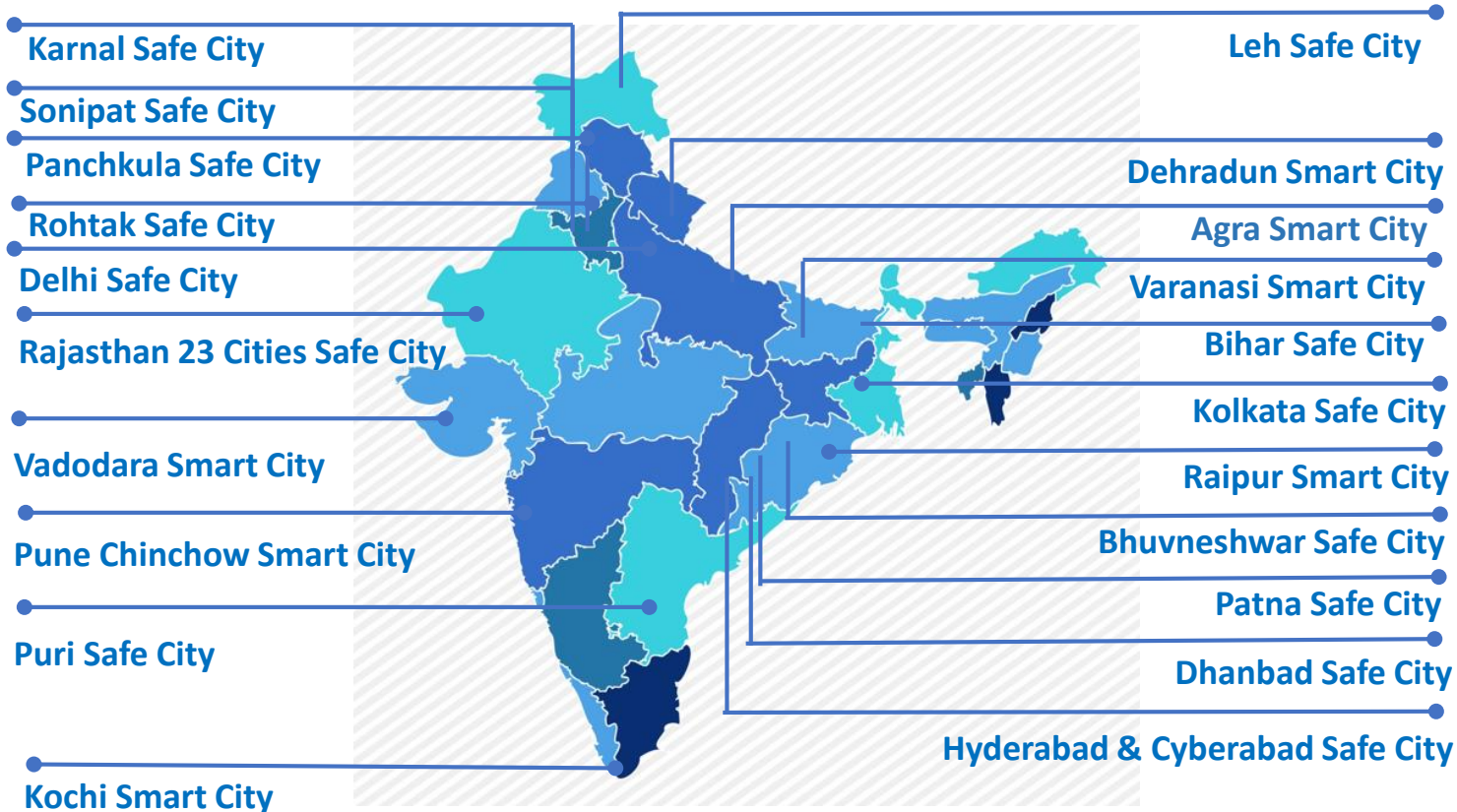
- Layer 3 Switch 8 and 16x1G Base-T PoE+ and 4x1G SFP slots
- Layer 2/Layer3- RIP, OSPF, BGP, **PIM** for IPv4 and IPv6
- Software Defined Networking- **OpenFlow v1.3**
- Industrial grade **operate reliably and consistently under extreme conditions:**
  - High ambient temperature
  - Electromagnetic disturbance
  - Power/voltage fluctuations
  - Machine vibration and mechanical hazards
- Fanless with wide operating temperature range
  - from **-40°C** to **75°C** (tested at **85°C** for days)
- Certification

 **NEMA-TS2, EMI EMC IP30**  
Allied Telesis™

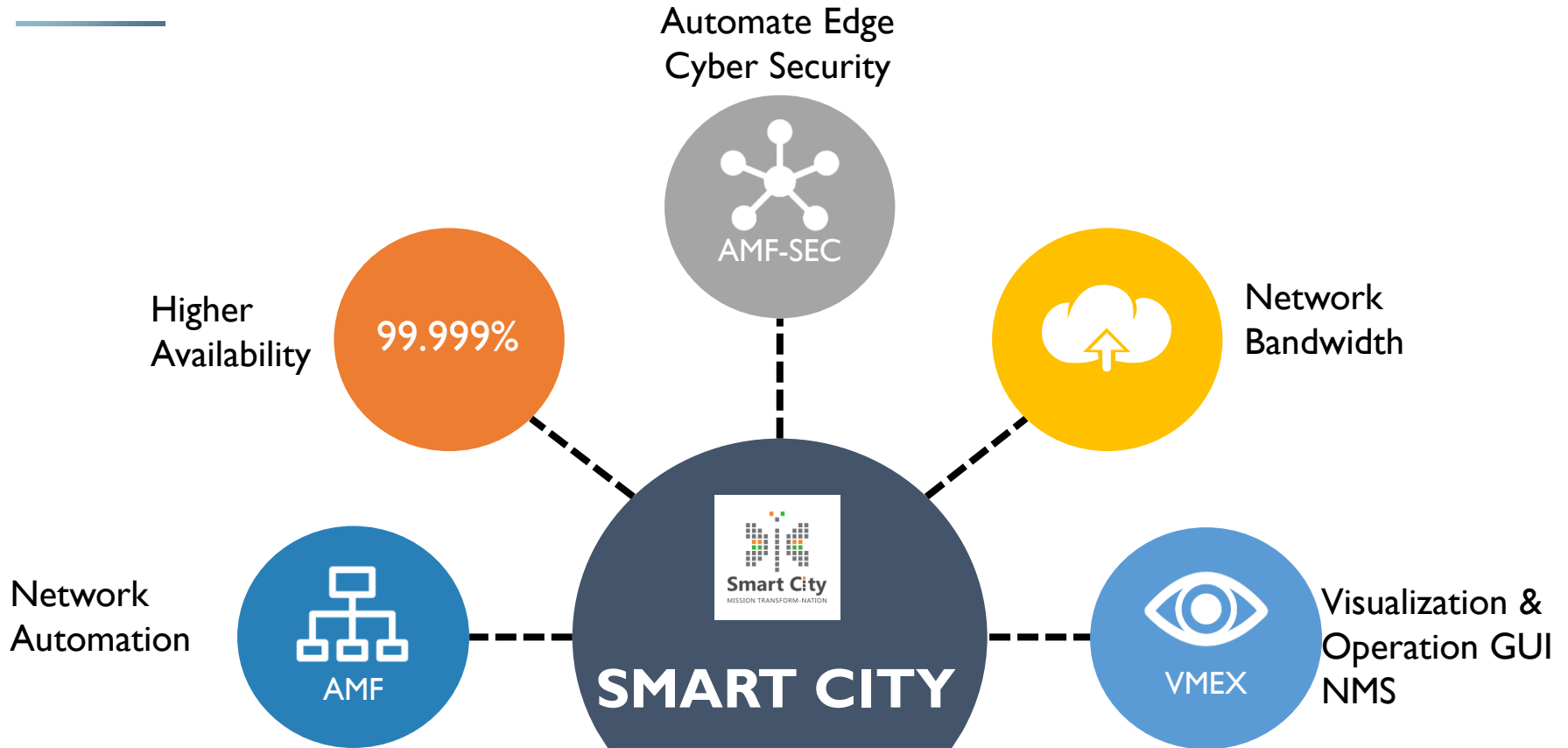


NETWORK SMARTER

# Smart & Safe City Projects in India

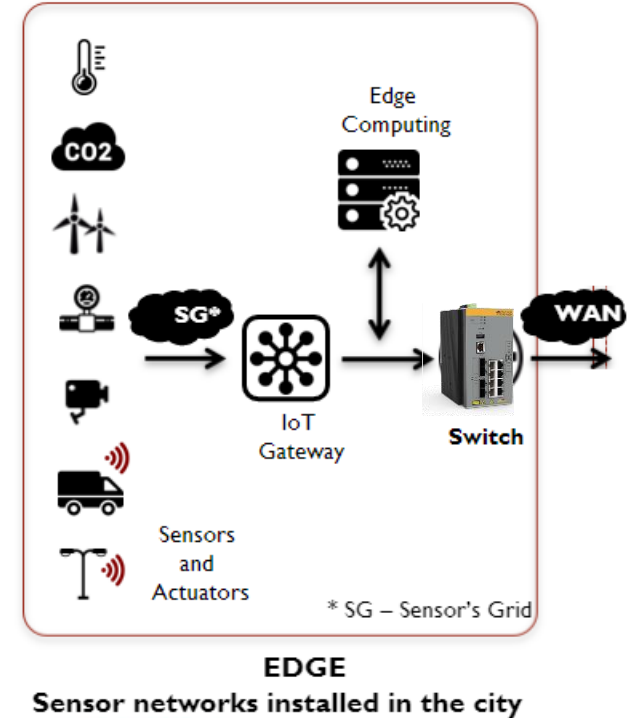


# Smart City Networks



# Smart City Edge Network – Take it Serious

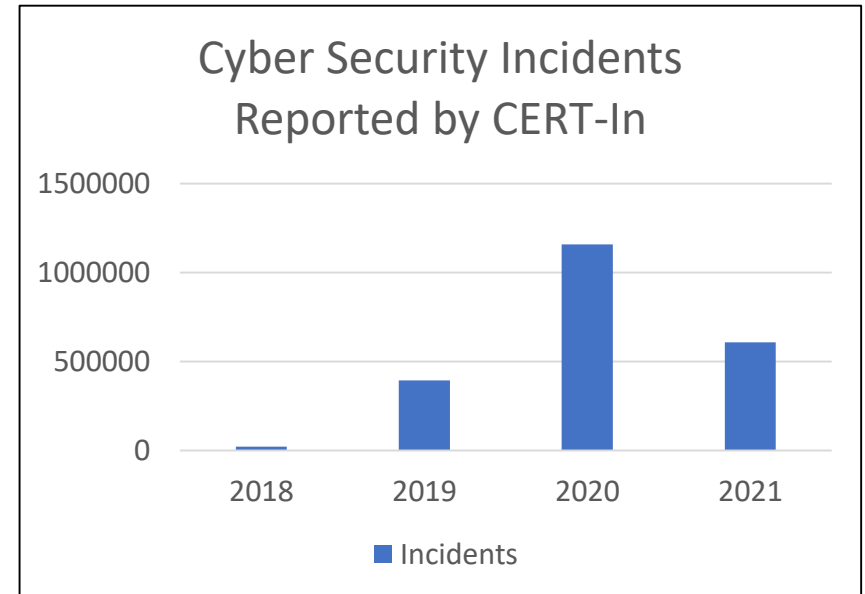
- Smart Cities are most Vulnerable to Cyber Threats
- Thousands of devices like (CCTV, Pollution Sensors, Water Sensors, Garbage Sensors, Parking sensors & many more) are deployed across city
- All Devices terminates on Edge Switch





# Cyber Security Incidents Increasing Exponentially

- According to data from CERT-In,
  - a total of 6,07,220 cyber security incidents were observed during 2021 up to June.
- 15,651 Indian websites Hacked in 2021 (up to June)
- 12,001 cyber security incidents related to government organizations



# Allied Telesis- Security Against Cyber Threats

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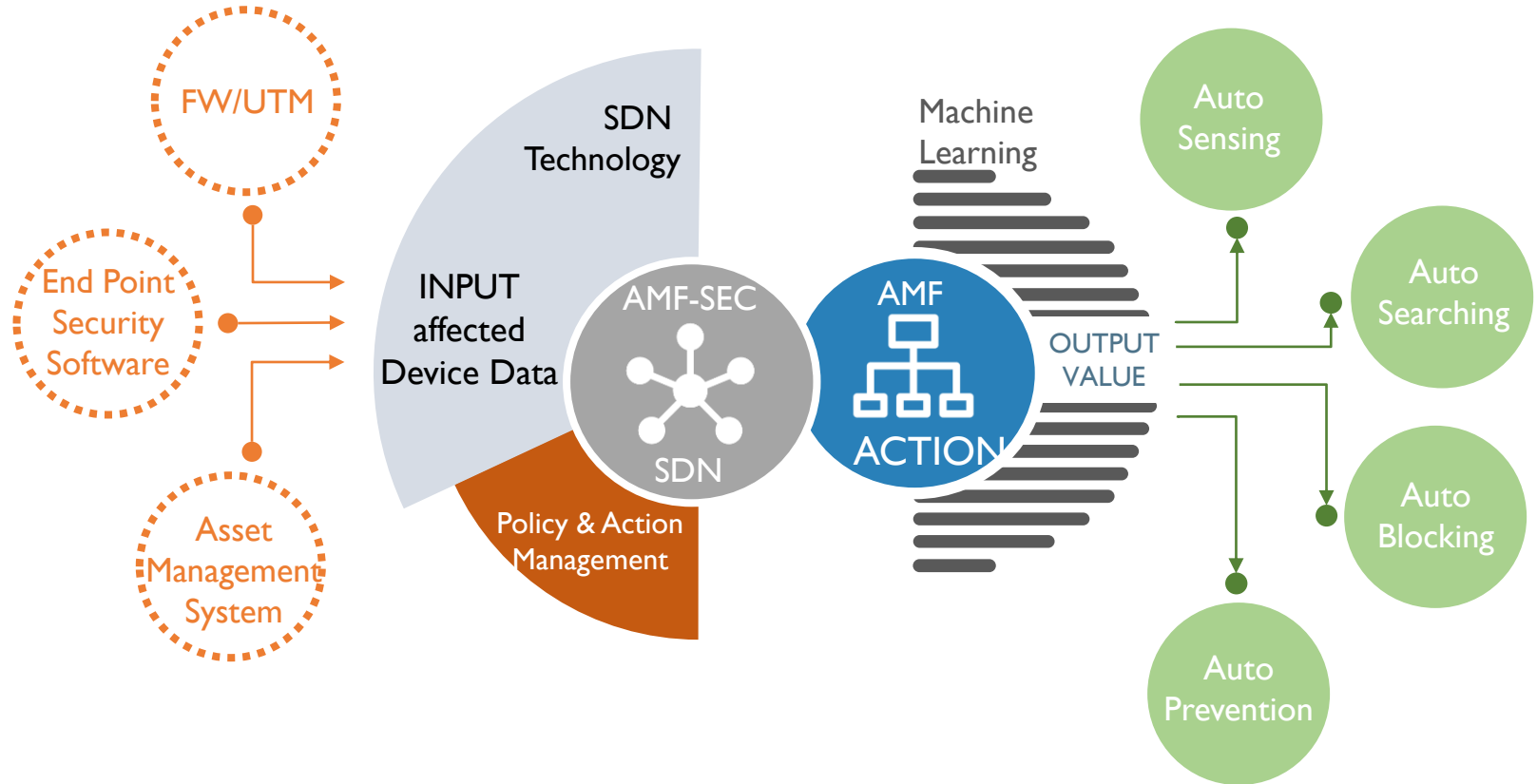
## **Smart City Cyber Security Policy-Ministry of Urban 2016**

- IT Architecture as suggested by NIST
- Message exchange between various applications - fully encrypted & authenticated
- Authentication of sensors/Devices
- VPN Tunnels From Edge to DC over ISP Network

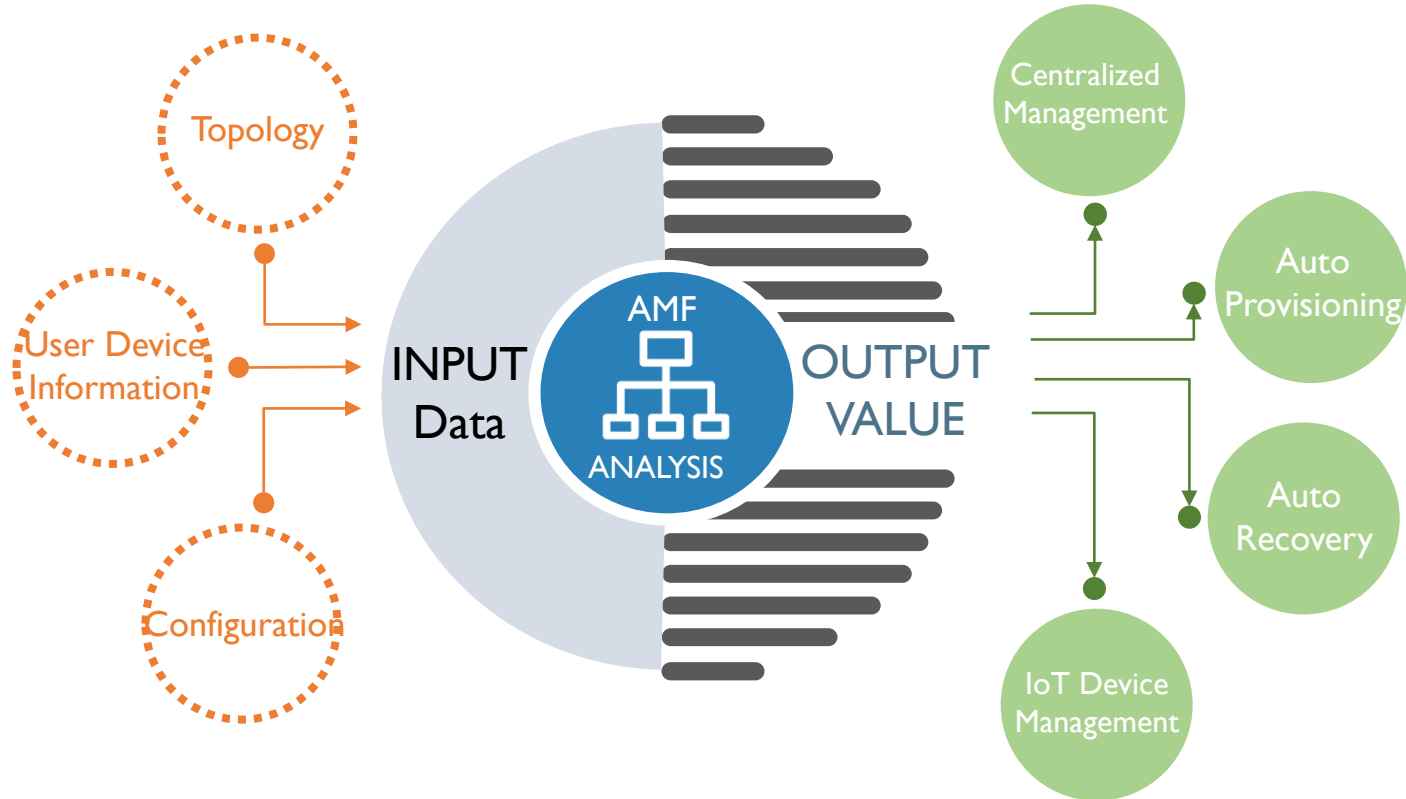
## **Allied Telesis Switches- Cyber Security Capabilities**

- FIPS 180-1, FIPS 186, FIPS 46-3 as per NIST
- SSH, SSL, HTTPS, X.509 certificate, domain-based application service identity within PKI using X.509 certificates with TLS
- NAC- endpoint security
- IP Source Guard, DAI-Mitigate Man-in Middle Attacks
- Tri-authentication: MAC-based, Web-based and IEEE 802.1X
- DoS attack blocking and virus throttling

# Software Defined Network to block Cyber Attacks



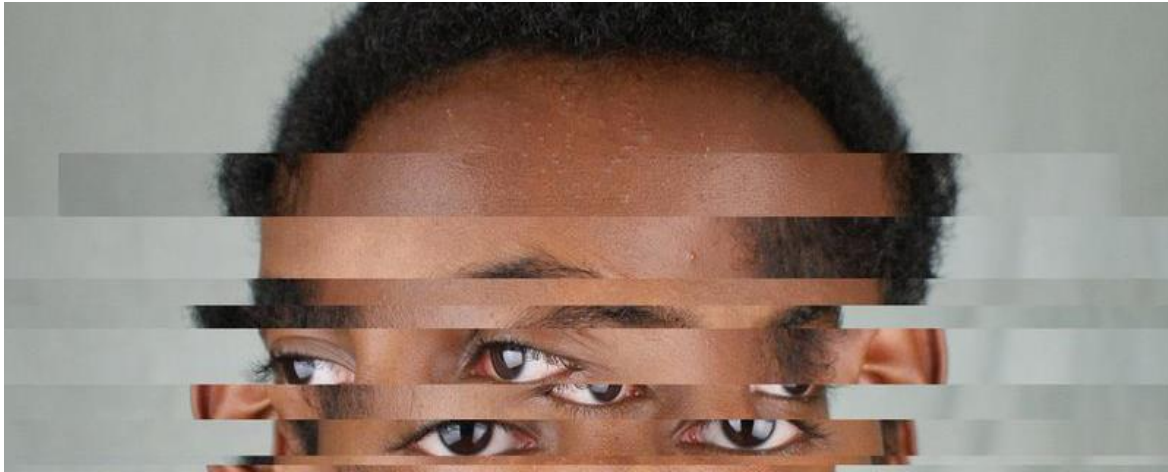
# Network Automation- AMF



# CCTV-The Main Smart City Application

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- Distorted images are of no use for forensic analysis
- The whole objective of surveillance- fails



# Network Planning- Plays Vital Role

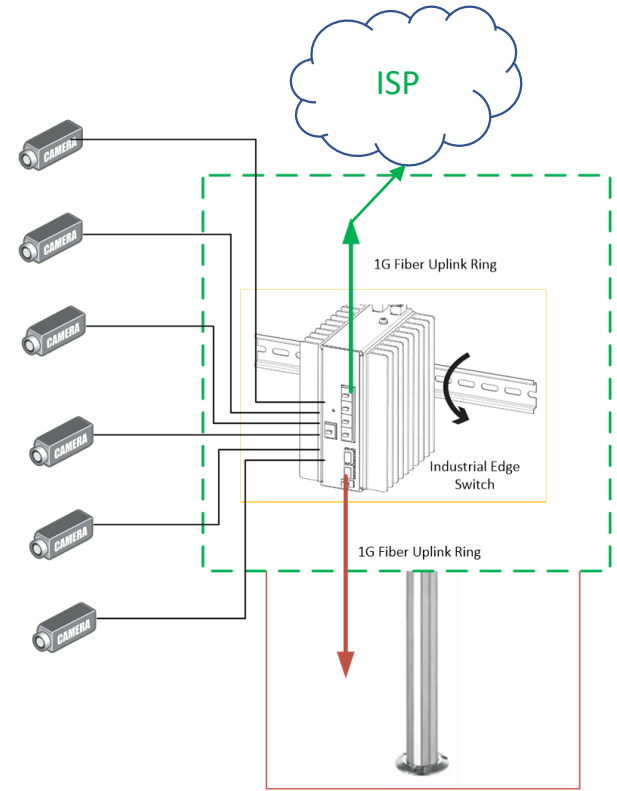
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- **Bandwidth Planning**
  - Video Data – Brusty in Nature
  - Video CODEC is sensitive to packet loss
  - One Way Latency-20-40ms
  - Jitter- 1-2ms with ow or Zero loss
  - Video Resolution- Bandwidth Requirements & Storage
  - Video Frame Per Second- Higher frame rate, higher bandwidth required
  - QoS- Planning



# Efficient Network Bandwidth Utilisation

- CCTV –bandwidth hungry application
- ISP network bandwidth – Major Cost in Smart City Projects
- Multicast CCTV Streams- Reduces the network bandwidth requirements to manifolds
  - Layer 3 Multicast – PIM for IPv4 and IPv6
  - Enhances Network Security
  - Mitigates Man-in-Middle Attacks like high jacking of streams
  - Mitigates the major issue layer 2 loops in the network- Enhances Application Availability





# Allied Telesis References



# Transport and Infrastructure

- Metro Rail Projects - FOTS Project
  - Lucknow Metro Rail Corporation Ltd (22 Stations)
  - Navi Mumbai Rail Corporation Ltd (11 Stations)
  - Nagpur Metro Rail Corporation Ltd (37 Stations)
  - Kanpur Metro Rail (30 Station)
  - Agra Metro Rail (30 Stations)
  - Mauritius Metro (22 Stations)



- Airports
  - More than 35 Indian Airports
    - FIDS, CCTV, Wi-Fi (Chandigarh Airport) network
  - T3 Terminal Delhi
    - Instrumental Landing System
    - IP Public Announcement System- GMR DIAL
  - Mumbai International Airport Limited
    - Western Expressway CCTV Network
    - Existing Juniper Core layer,
    - Aggregation and Edge Layer- Allied Telesis

# Ministry of Defence & Research Labs

- SDSC-SHAR
  - Communication launch pad
- Proof & Experimental Establishment (PXE) - PXE DRDO
  - Campus LAN Network
- Liquid Propulsion Systems Centre (LPSC) – ISRO
  - Wind Radars Network



- Mishra Dhatu Nigam Limited, (MIDHANI)
  - Campus LAN Network
- Heavy Alloy Penetrator Project, Tiruchirapalli
  - Campus LAN Network
- Military College of Electronic and Mechanical Engineering (MCEME)
  - Campus LAN Network

# Education

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- National Institute of Technology- Raipur
- National Institute of Technology- Silchar
- Hyderabad University
- Ministry of External Affairs- India
  - E-library project for 62 colleges Bhutan
- Military College of Electronic and Mechanical Engineering
- Kolaghat Engineering College, Kolkata
- Anna University
- Gujrat college of Technology
- College of Defense and Management- Ministry of Defense
- KPC Medical College, Kolkata
- Mahatma Gandhi University, KOTTAYAM
- Bangalore University
- Karnataka Institute of Medical Science
- Dr. G.R. Damodaran College of Science
- Government Engineering College, Wayanad
- Assam Valley College
- Bengal Engineering and Science University, Shibpur
- Kalyani Government Engineering College

# Oil & Gas

- **Industrial Plants**

- IOCL more than 100 depots across India
- BPCL 67 locations across India
- HPCL – Plants across India
- GAIL- Pipeline Surveillance Network Across India
- ONGC
- Bank Note Paper Mill- Mysore

- **Reserve Bank of India**

- 14 Branches across India

- **BARC Mumbai Campus**



**IndianOil**



# Thank you!



Open Up your AI experiences

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