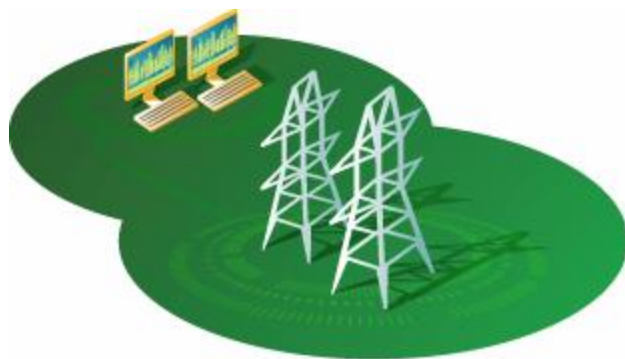




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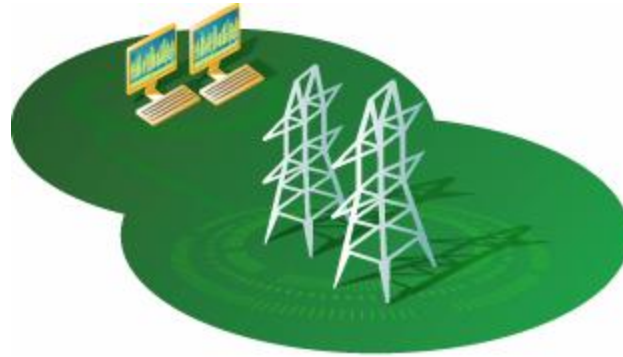


COMMUNICATION REVOLUTION

Mind please **not evolution** is the call of the hour to enable us to meet our 21st Century demands from electricity grid.



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EXPECTATIONS OF 21st CENTURY



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INTELLIGENT GRID

SHOULD BE PACKED WITH IT-SOFTWARES, METERS AND COMMUNICATION LINKS FOR REMOTE CONTROLLED OPERATIONS



E DISTRIBUTION AUTOMATION DEVICES

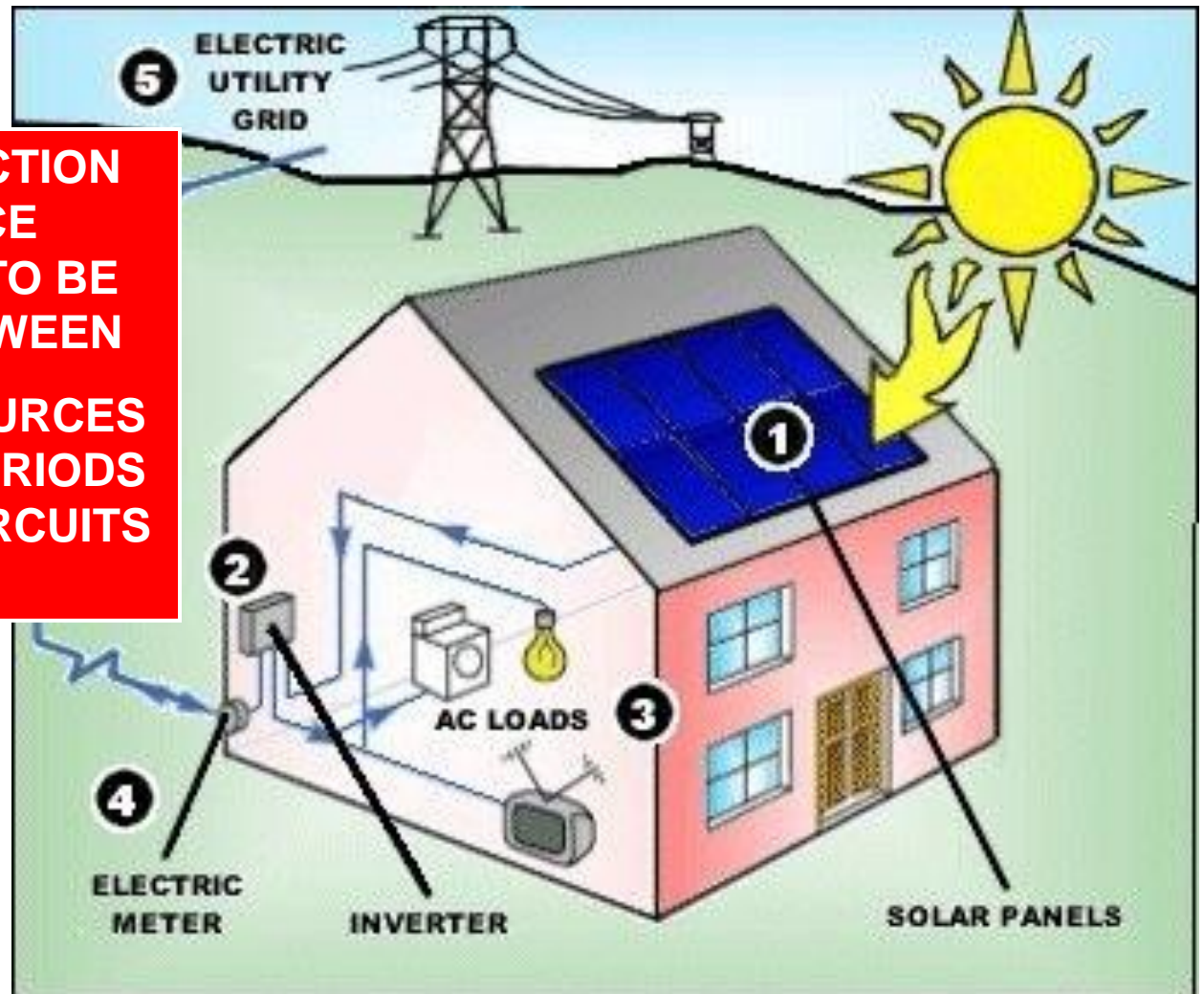
F RESIDENTIAL CONSUMERS





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A CONSUMER CONNECTION WITH INTELLIGENCE QUOTIENT IN HOMES TO BE ABLE TO SWITCH BETWEEN DIFFERENT POWER SOURCES DURING PEAK LOAD PERIODS AND CUT SELECTED CIRCUITS AS PER CHOICE





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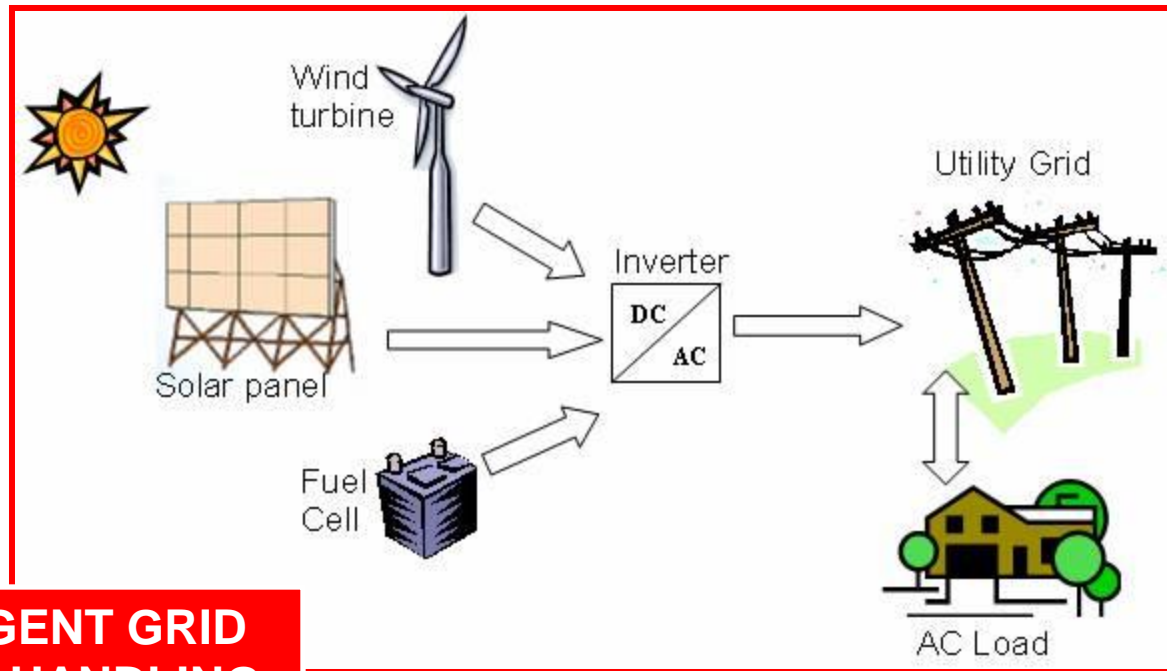


LOAD MANAGEMENT

**TO AND FRO COMMUNICATION
BETWEEN LOAD CENTERS AND
GENERATION CAN SMARTLY
HANDLE AND MANAGE PEAK
LOADS**



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**AN INTELLIGENT GRID
CAPABLE OF HANDLING
DISTRIBUTED
GENERATION**



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**POWER UTILITY
SHOULD GIVE
FACILITY TO PLUG-
IN ELECTRIC
VEHICLES**



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An intelligent grid which is capable of fault detection and self-healing of the network without the intervention of technicians is required for power trading because this grid only can ensure reliable supply of electricity



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**REAL TIME
COMMUNICATION
ABOUT ENERGY
DRAWL CAN HELP IN
CHARGING HIGHER
TARIFF FOR PEAK
PERIOD DRAWLS**



This communication only can make consumers aware and active about energy conservation . Utilities can provide financial incentives to shift demand to off-peak hours and reduce overall consumption



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OUTAGE REPORTING

**FACILITY AT CONSUMER END TO REPORT ABOUT
FAULTS**



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EXAMPLE OF FAULT REPORTING

Streetlight Outage Reporting
CenterPoint Energy



Quick Help

Report Streetlight Outage:



Step 1:

Use 'Find Address' button  (top of screen) to get to a location where the faulty streetlights are located. Next go to Step 2 (below) to select streetlights.

OR

If you know the streetlight 6-digit number, click on the 'Report Streetlights' button  (top of screen), and then click on the 'Search Streetlight(s) by Light Number/ Account Number' button . Type in the streetlight number to find the light in question and move to Step 3 (below).

Step 2:

Click on the 'Report Streetlights' button  (top of screen), and then click on the 'Graphical Streetlight Search' button 

Latitude:30.018948 Longitude:-94.570326



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HV CONSUMERS DIRECTLY CONNECTED WITH THE 220KV AND 132KV TRANSMISSION GRID EXPECT BETTER SERVICES

Such Consumers want richer content like enriched voice calling and multimedia chat, and high-quality video calling . This can be provided by modern smart communication methods



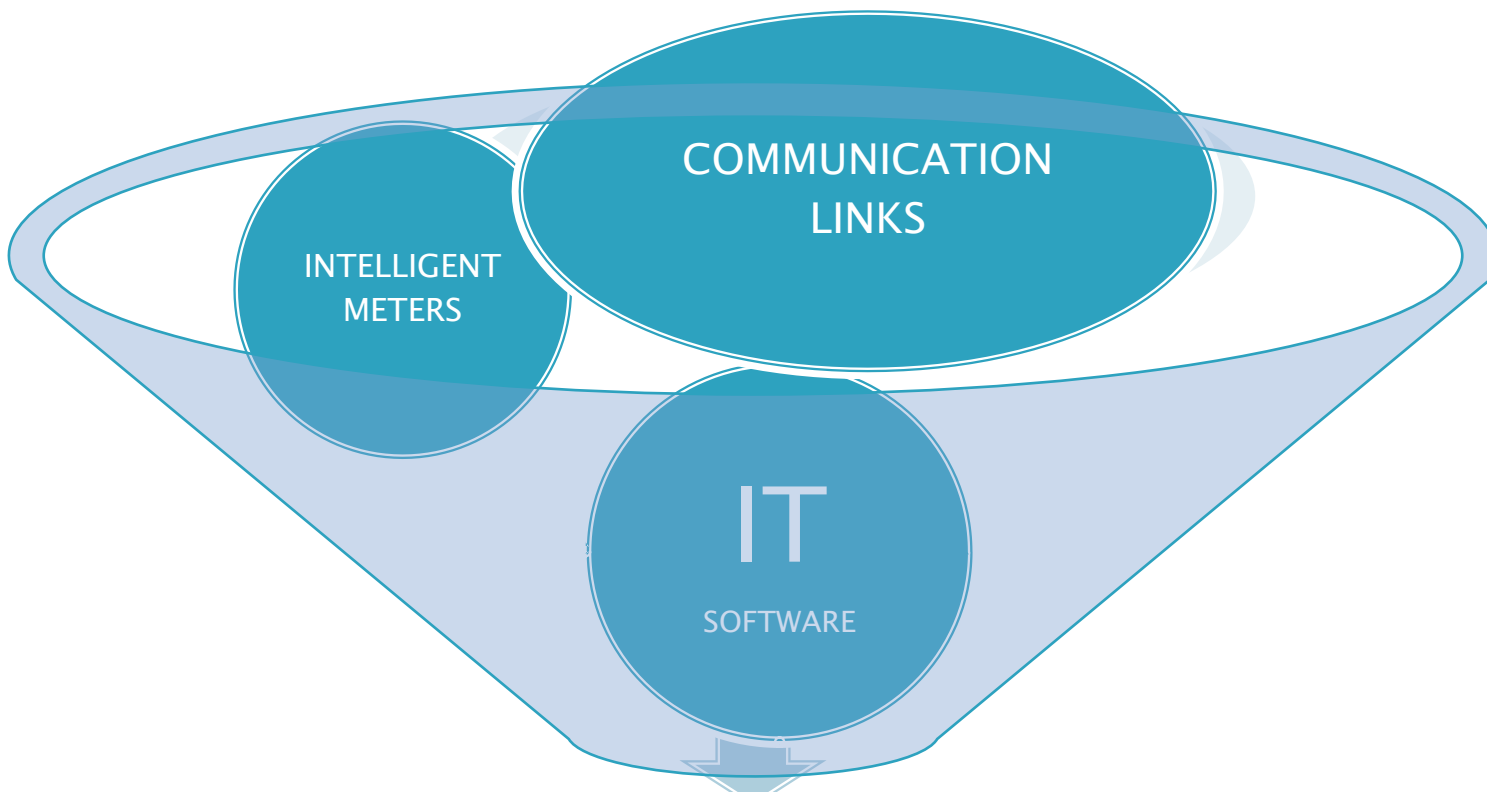
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FOR ALL THIS TRANSCOS REQUIRE A SYSTEM EQUIPPED WITH FOLLOWING

- Facility to manages the input / output signals transmitted between the main control station and remote device.
- A control station that receives data through a telemetry network and then stores it in the database, processes it and sends control signal back to the remote device



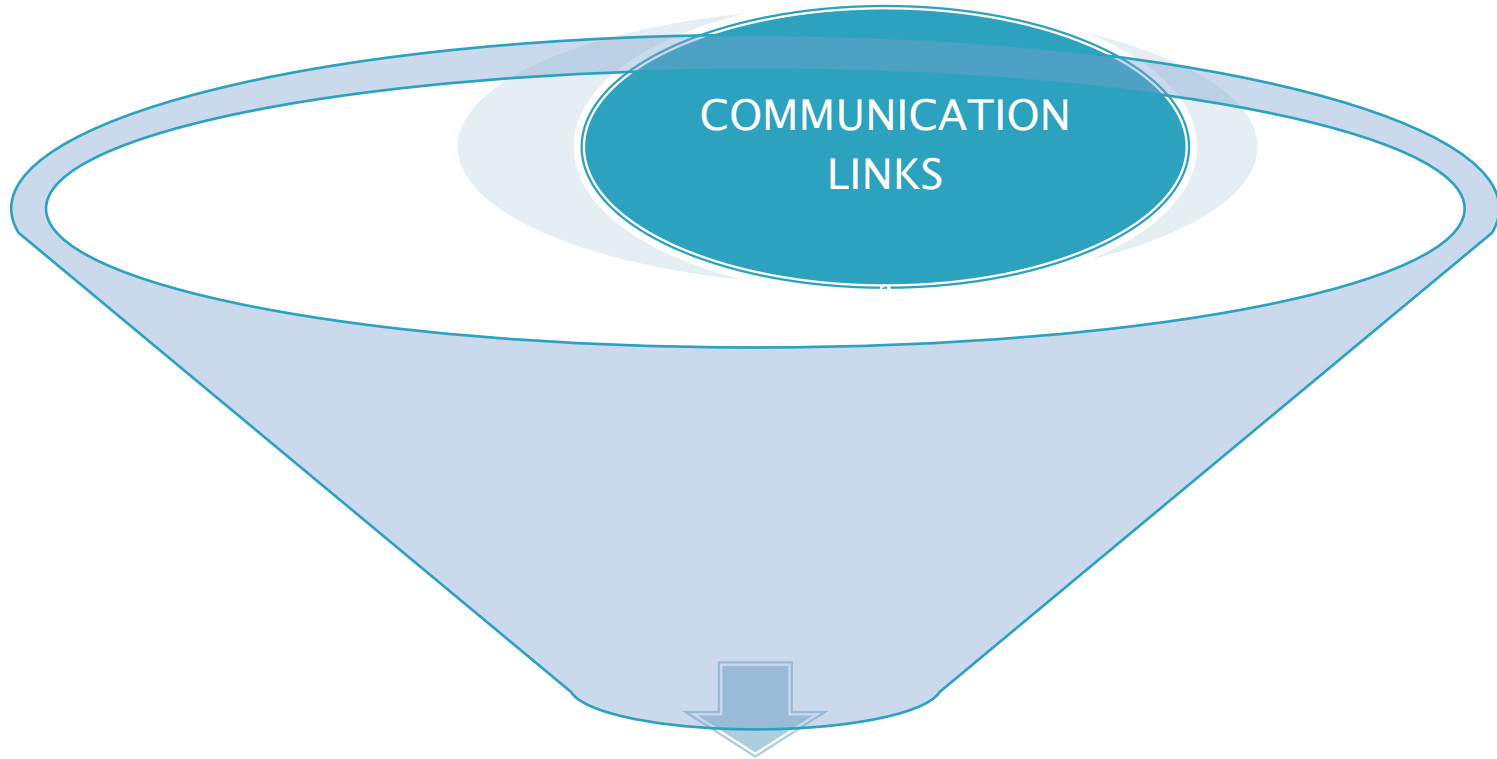
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**COMPONENTS OF INTELLIGENT COMMUNICATION SYSTEMS
TO ENABLE TRANSCOs TO MEET THE EXPECTATIONS OF
21st CENTURY**



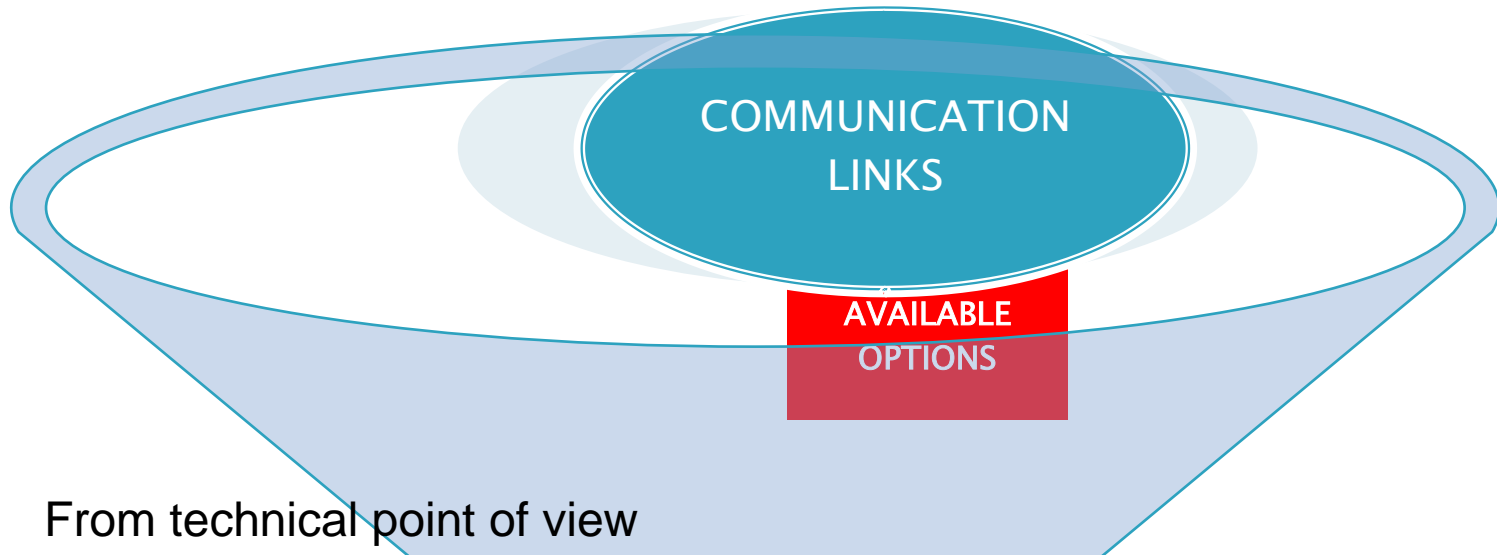
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**HIGH LEVERAGE COMMUNICATION NETWORK
IS REQUIRED TO HANDLE ALL THIS**
This Network should be build today and should be
able to provide solution for tomorrow

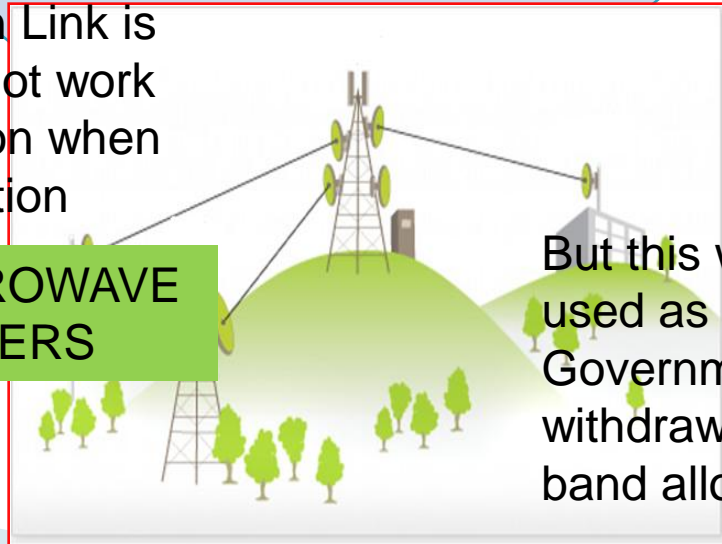


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From technical point of view this communication Link is reliable and does not work only in one condition when there is an obstruction

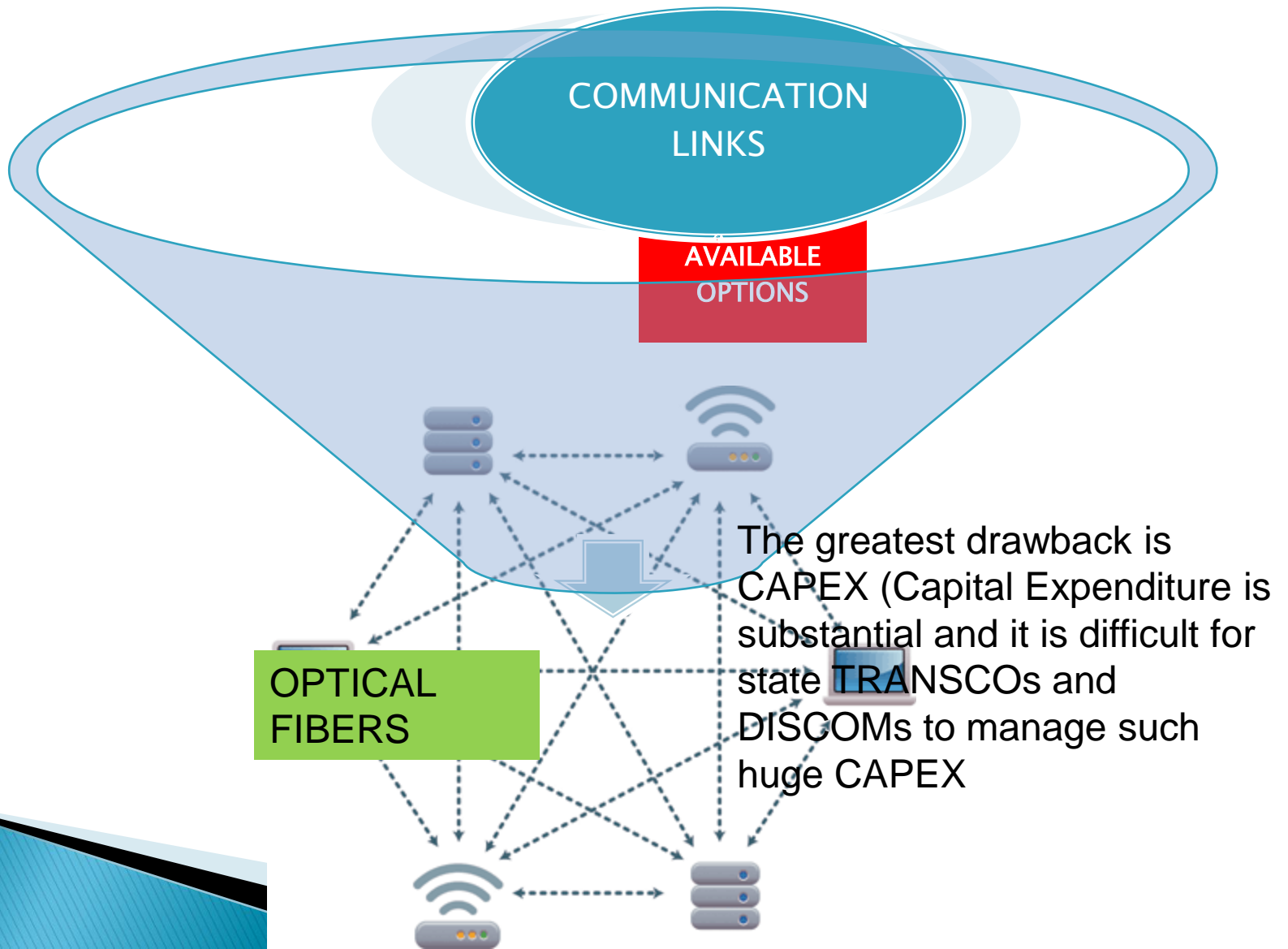
MICROWAVE TOWERS



But this will no longer be used as recently DoT, Government of India has withdrawn the frequency band allotted to it.



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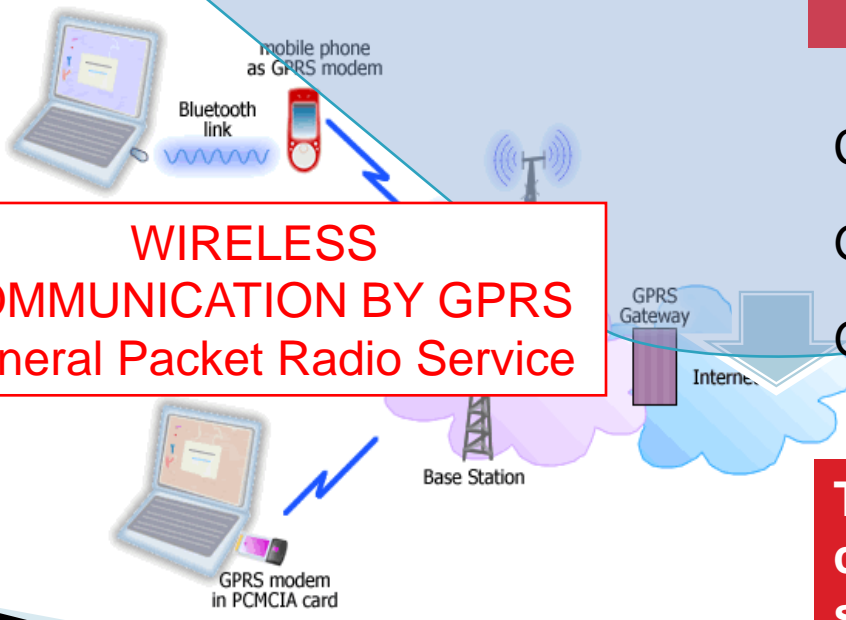
COMMUNICATION LINKS

**AVAILABLE
OPTIONS**

- Cost Effective
- Guarantees Immediate Actions
- Good speed

**WIRELESS
COMMUNICATION BY GPRS
General Packet Radio Service**

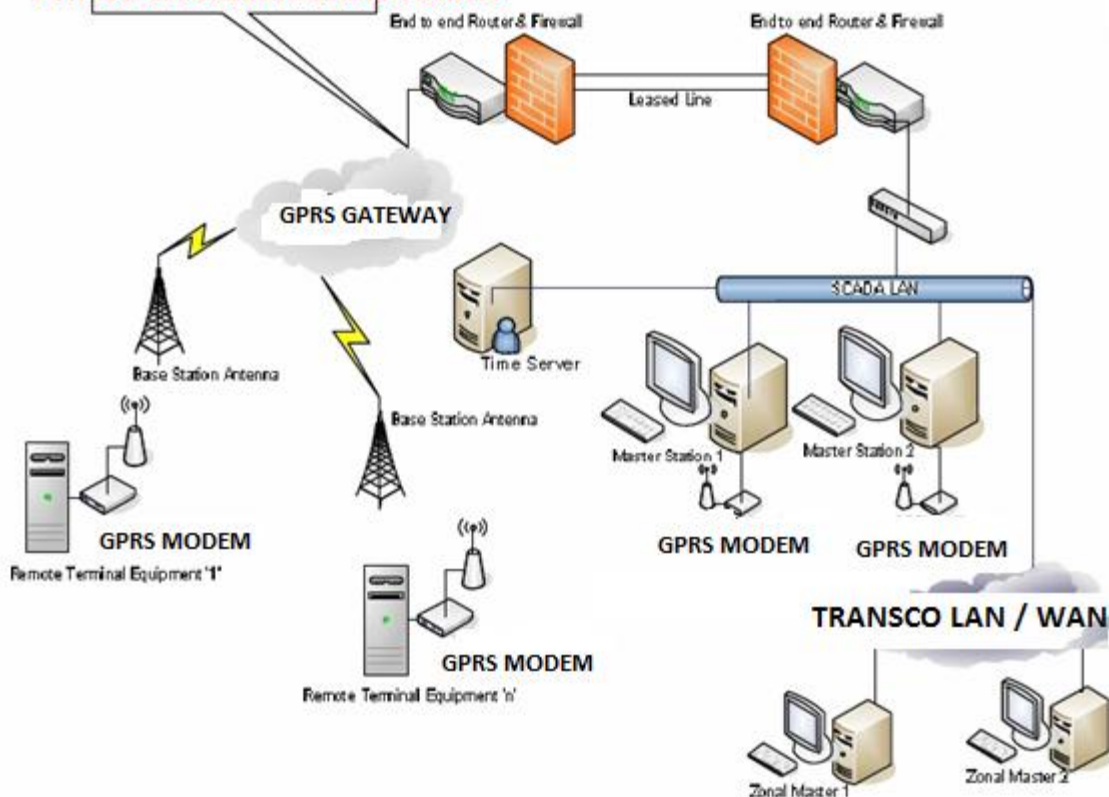
**The drawback is security in
case GPRS is taken by a private
service provider**





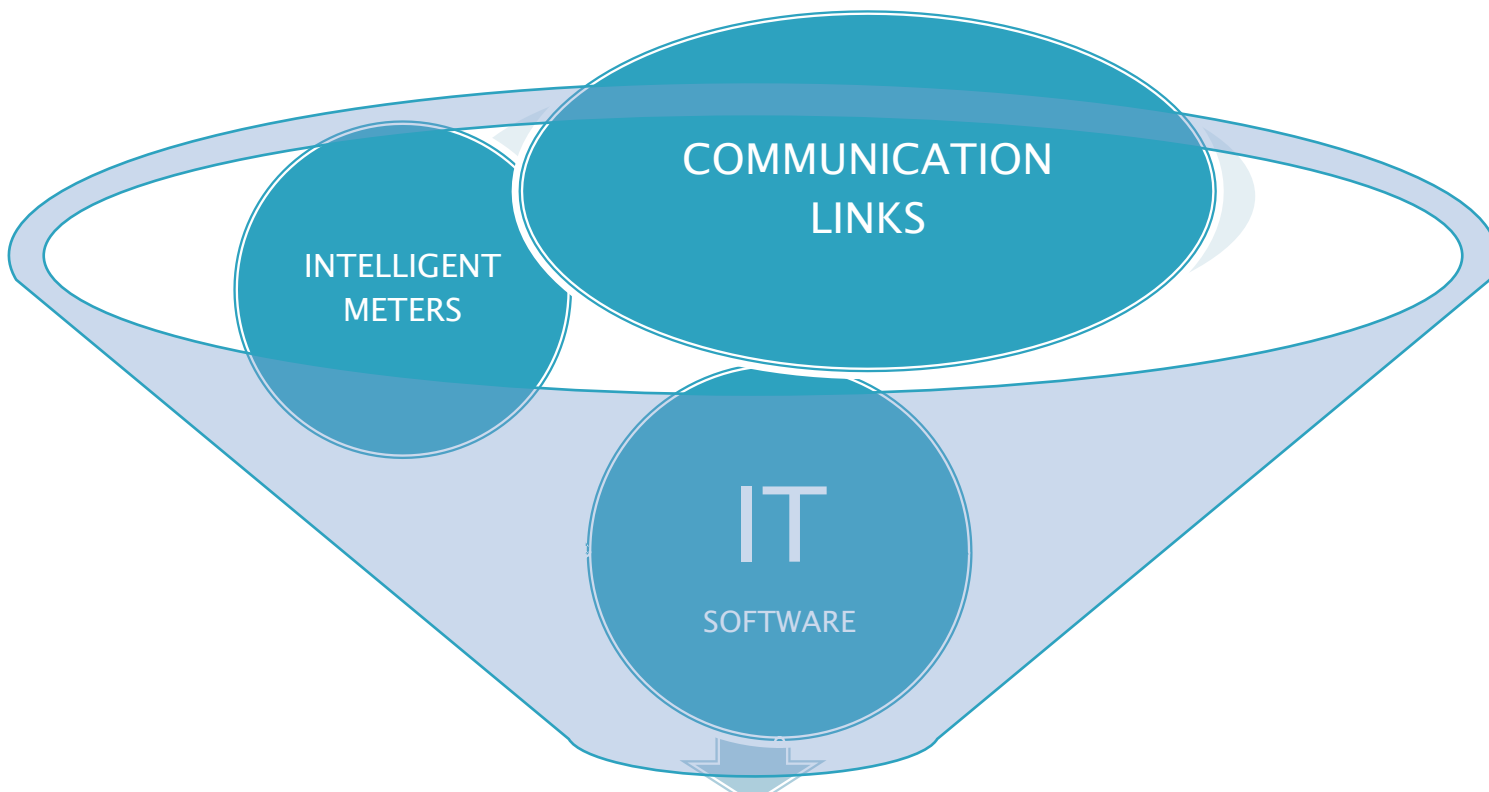
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A TYPICAL GPRS COMMUNICATION SYSTEM





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**COMPONENTS OF INTELLIGENT COMMUNICATION SYSTEMS
TO ENABLE TRANSCOs TO MEET THE EXPECTATIONS OF
21st CENTURY**



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ADVANCED METERING INFRASTRUCTURE (THE LATEST TECHNOLOGY)

Advanced Metering Infrastructure (AMI) are systems that measure, collect, and analyse energy usage, and communicate with metering devices such as electricity meters, gas meters, heat meters, and water meters, either on request or on a schedule. These systems include hardware, software, communications, consumer energy displays and controllers, customer associated systems, Meter Data Management (MDM) software, and supplier business systems.

The network between the measurement devices and business systems allows collection and distribution of information to customers, suppliers, utility companies, and service providers. This enables these businesses to participate in demand response services. Consumers can use information provided by the system to change their normal consumption patterns to take advantage of lower prices. Pricing can be used to curb growth of peak consumption.

AMI differs from traditional automatic meter reading (AMR) in that it enables two-way communications with the meter. Systems only capable of meter readings do not qualify as AMI systems.



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The major advantage of using public networks like GPRS is that they do not require investment in the network infrastructure, continuous network monitoring, maintenance and up-gradation by the user. The security features built-in (Encryption, VPN, Firewalls, Static IP, Passwords, etc.) in GPRS network are adequate for the TRANSCO SCADA application.



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PROPOSAL

All Utilities should join hands to work on the concept of a single company that can provide communication solutions for electricity transmission and distribution. Two models are workable

- Front-runners like PGCIL, BSES may start operating as communication service providers to Trancos and DISCOMs. They should operate like internet service providers. This will benefit power utilities by bringing down the CAPEX to zero.
- These service provider shall ensure latest technology and the botheration of investment of technology shall be zero once for all times to come
- In case , there are more than one service operator, they shall provide the necessary competition among themselves and this will ensure highest quality of technology on cheapest rates to all of the utilities.
- Consumers shall receive high Quality of Experience (QoE)
- Security issue for communication network shall also be solved as these network operators will not be private telecom operators and therefore shall be trusted worthy.

PROPOSAL

A Common Fibre Optic Backbone

Such service providers may decide to develop one common fibre optic backbone to share its bandwidth

Central Regulator like TRAI may be put in place to guide these exclusive communication service providers for TRANSCOs



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PROPOSAL

Central Regulator

Shall facilitate regulations and co-ordination among the operators

Uniformity of Systems

Interoperability

Small Capital expenditure

Availability of state-of-Art Technology

Hassle-Free Operations

Low Operating Costs

Last Mile Conectivity

Public Sector Telecom Service Provider to TRANSCOs / DISCOMs

Private Sector Telecom Service Provider to TRANSCOs / DISCOMs



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PROPOSAL

I would also share with you one more thing and that is the most crucial thing

In our country, we roll out ambitious plans like R-APDRP etc without putting any successful pilot project in place while even in countries like US , pilot projects with the help of experienced companies like IBM etc are done before rolling out any government scheme for any up-gradation of technology. This pilot project caters to solve all issues and hiccups before full scale launch of any scheme.

Due to resource crunch, almost in every scheme ,piece-meal approach is adopted which gives marginal results and improvements.



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PROPOSAL

To sum up at the end, I will stress upon the fact that it is not the technology of communication which should bother our head but we should focus on CAPEX and also we should notice that adoption of new technologies require difficult decision making situations with all possibilities of indefinite and un-expected results.

Therefore to ensure uniformity, state-of-art technology and efficiency , it is high time, all utilities should join hands to work in co-ordination for independent service providers otherwise very similar to our transport sector Airplanes and bullock carts shall move side by side in TRANSCOs and DISCOMs as well , making it impossible to deliver the kind of intelligent services expected in this 21st Century



Uttar Pradesh Power Corporation Limited

PRESENTATION BY

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STATE DESIGNATED AGENCY

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LUCKNOW

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