



# SATSIX : A Network architecture for Next generation DVB-RCS Systems

L. Fan, C. Baudoin, F. Rodriguez, A. Ramos, J.A. Guerra, B. Cuesta, G. Fairhurst, A. Sathiaseelan, P. Berthou, T. Gayraud, L. Liang, A. Yun, E. Callejo, I. Melhus, S. Iyengar, H. Cruickshank, Z. Sun



- ❖ Requirements and Constraints
- ❖ Overall Network Architecture
- ❖ Functional Architectures
- ❖ Applying the Network Architecture



## ❖ QoS requirements

### ❖ Characteristics

Delay sensibility, Packet loss sensibility, Bandwidth, Burstiness, Jitter

### ❖ Applications:

Web-Browsing, FTP, E-mail, Messenger, VoIP, P2P, Videoconference, Streaming, Alert Messages , Interactive Gaming Video Surveillance

## ❖ IPv6 Network Architecture Requirements

### ❖ Multicast

### ❖ Mobility

### ❖ Security

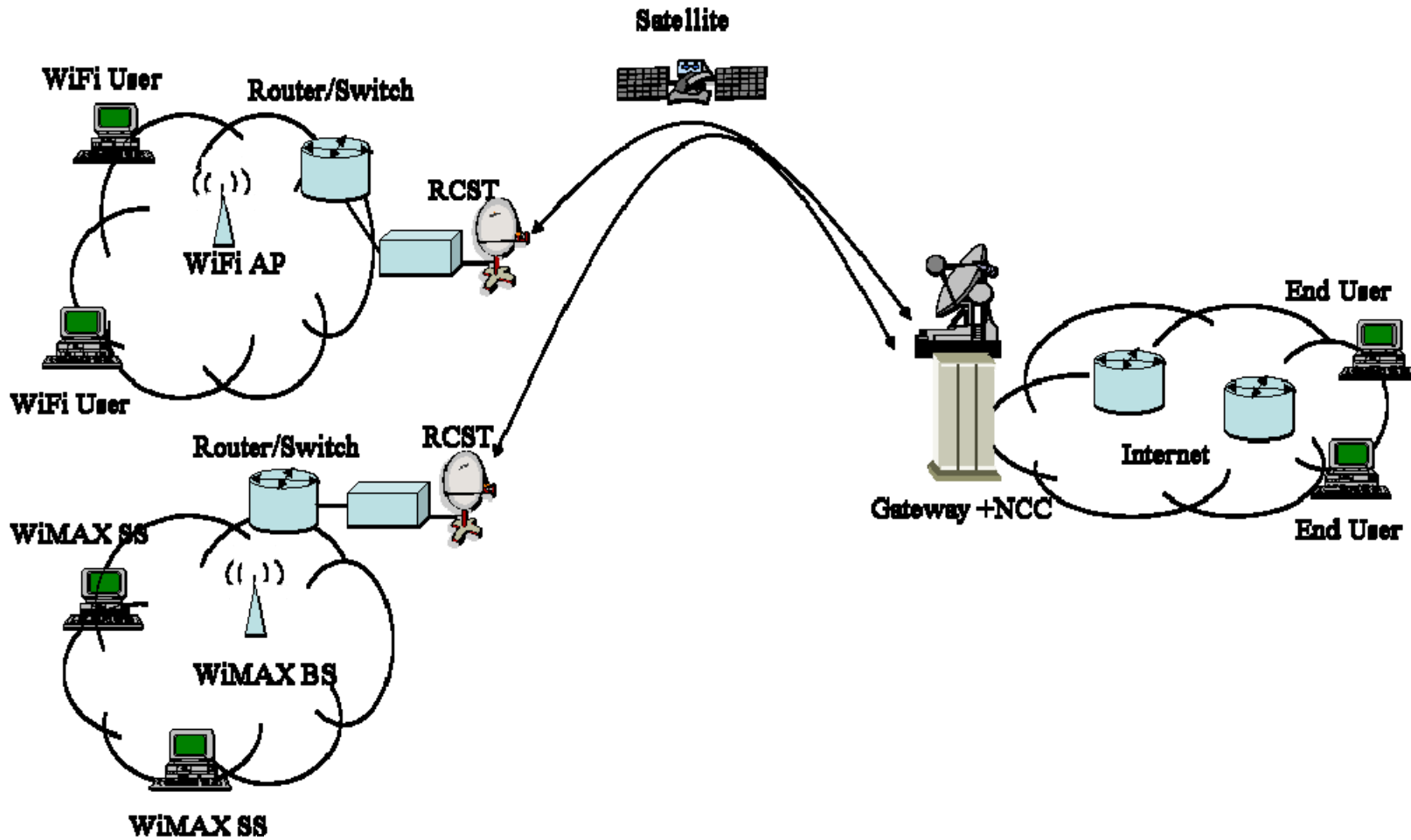


# QoS Requirements

	Bandwidth		Delay	Size	Jitter	Loss (PLR)	Security	Burst Oriented	Protocols
	Return	Forward							
<b>Web-Browsing</b>	16 kbps	64 kbps	<1sec	10K B	N.A.	0	Optional (HTTPS)	X	HTTP, HTTPS, TCP & IP
<b>FTP</b>	>14kbps		N.A.	MB	N.A.	0	Optional	X	FTP, TCP & IP
<b>E-mail</b>	>20kbps		<5 min	<10K B	N.A.	0	Required		POP3, SMTP, IMAP, ESMTP, TCP & IP
<b>Messenger</b>	As available		N.A.	250B	N.A.	0	Optional	X	MSNP8, MSNP9, MSNP10, TCP & IP

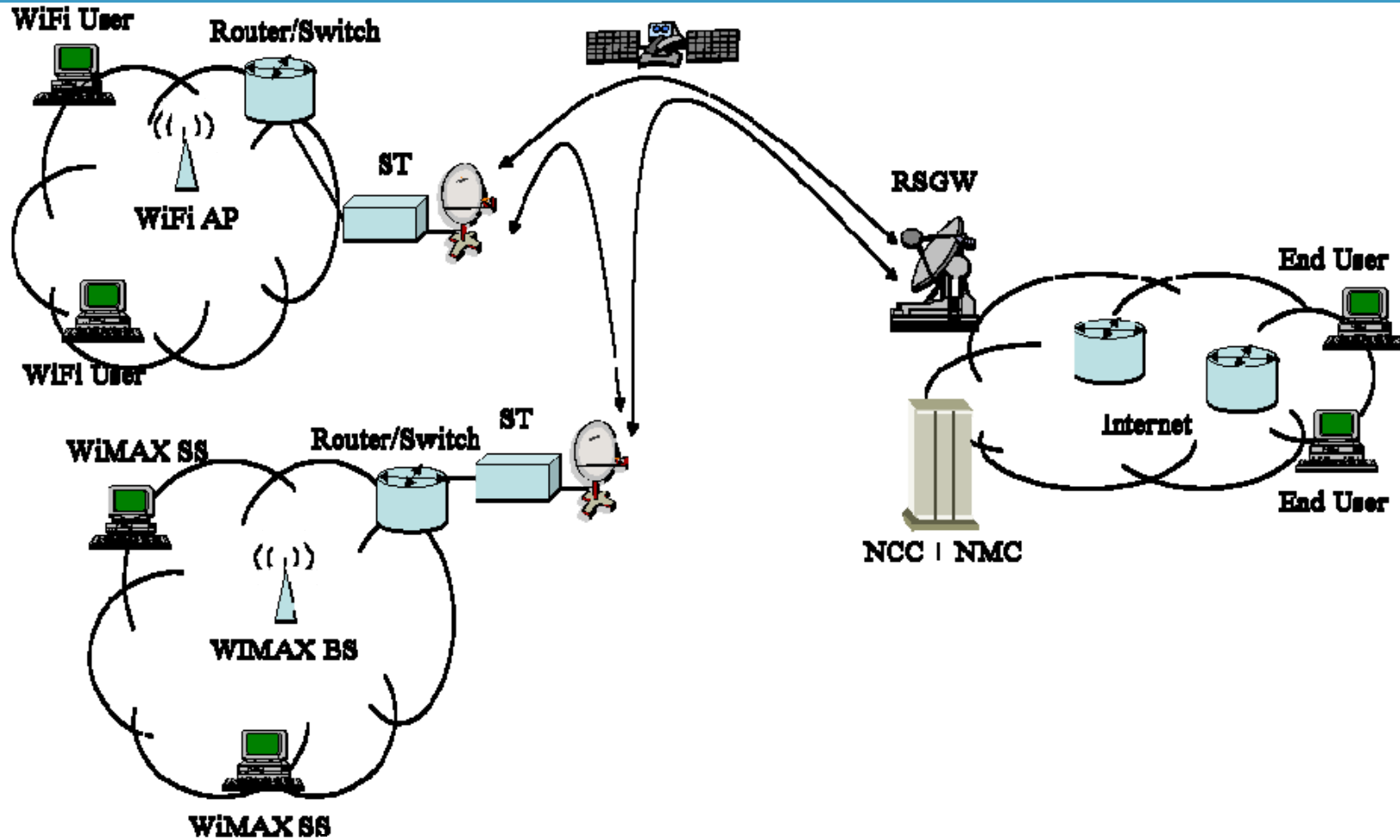


# SatSix Network Architecture Transparent Star Topology



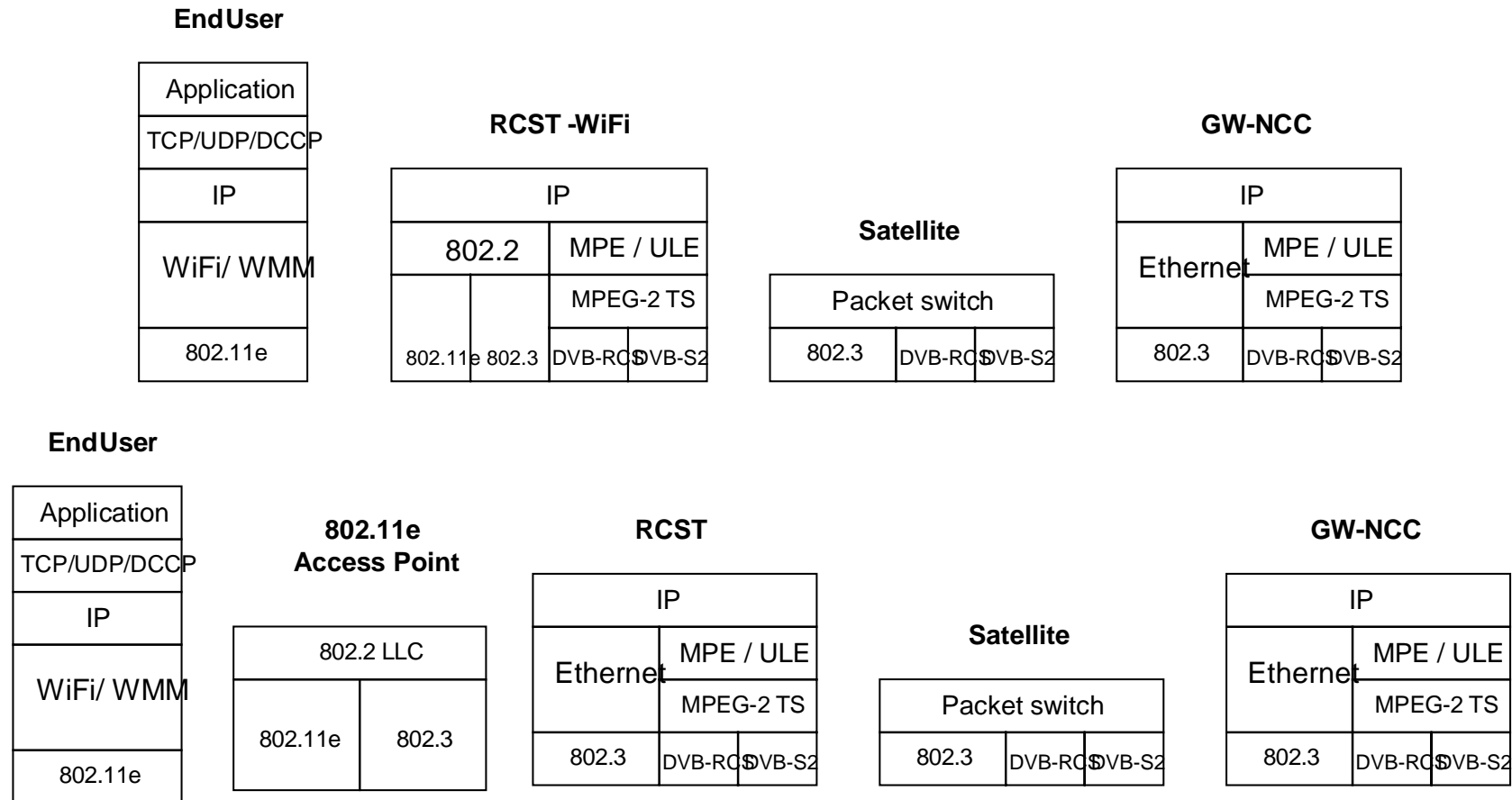


# SatSix Network Architecture Regenerative Mesh Topology



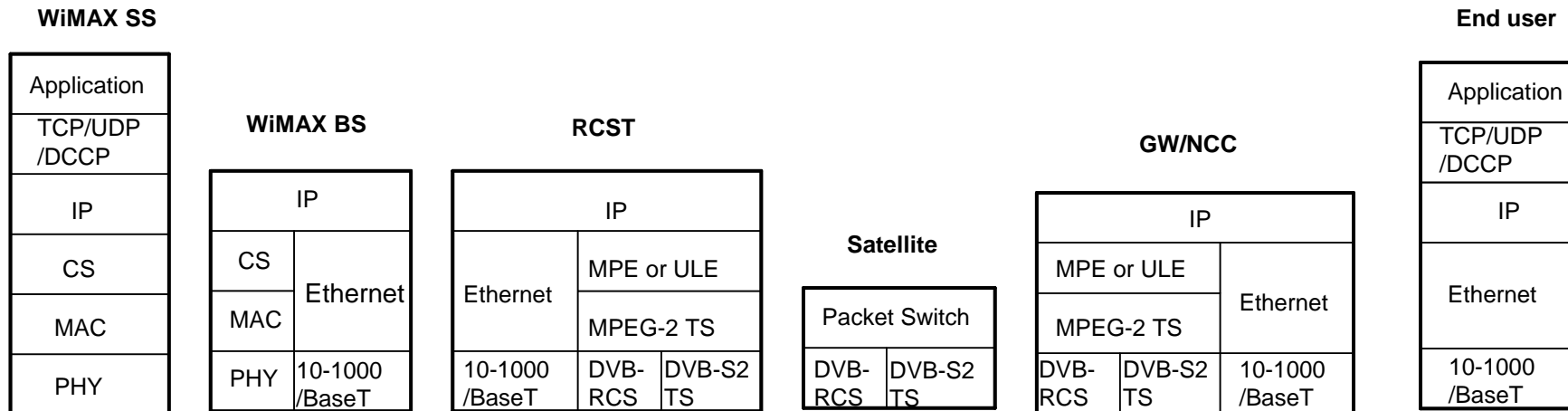


## ❖ Interworking with WiFi



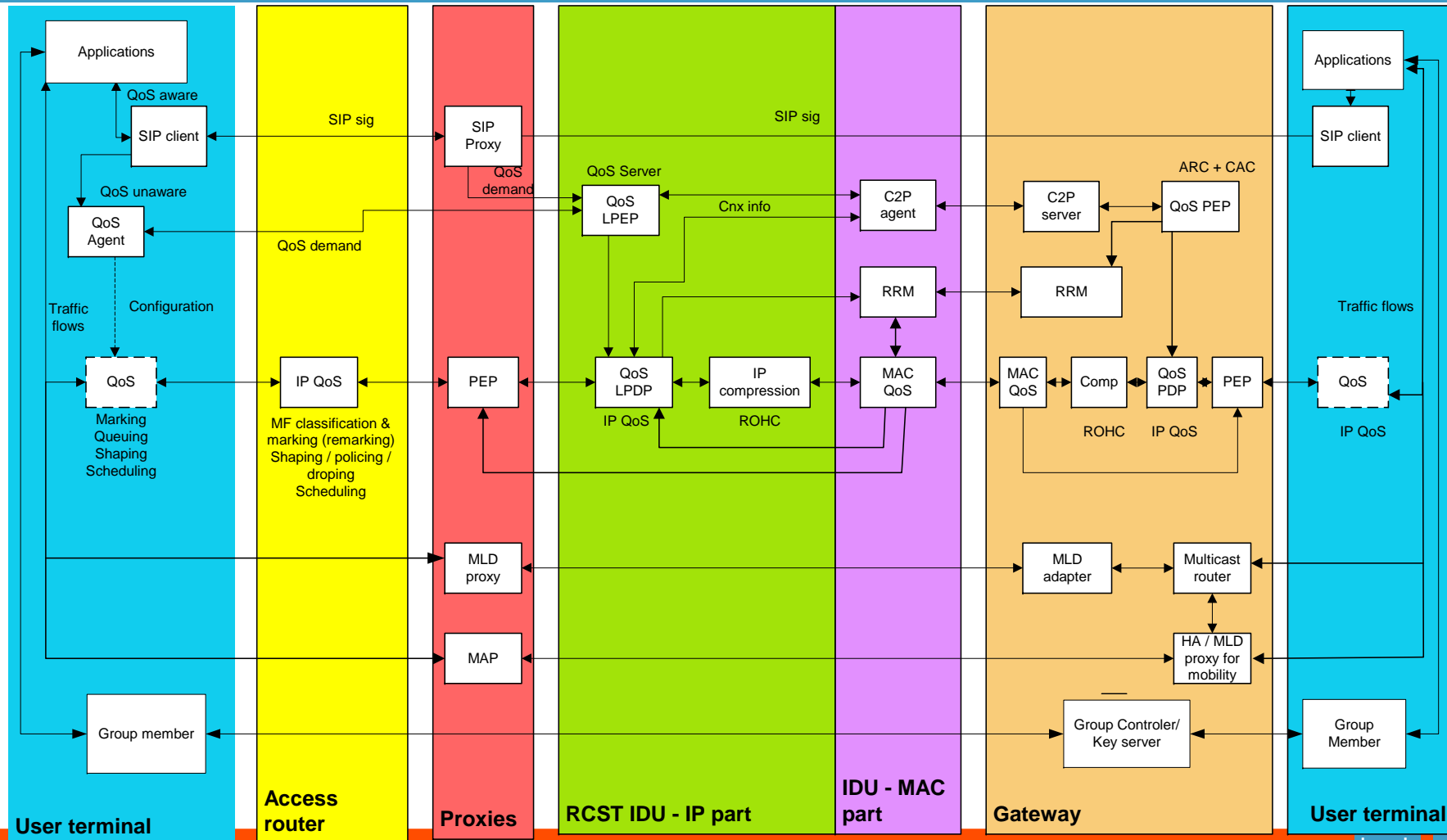


## ❖ Interworking with WiMAX





# Overall SatSix Functional Architecture



back next



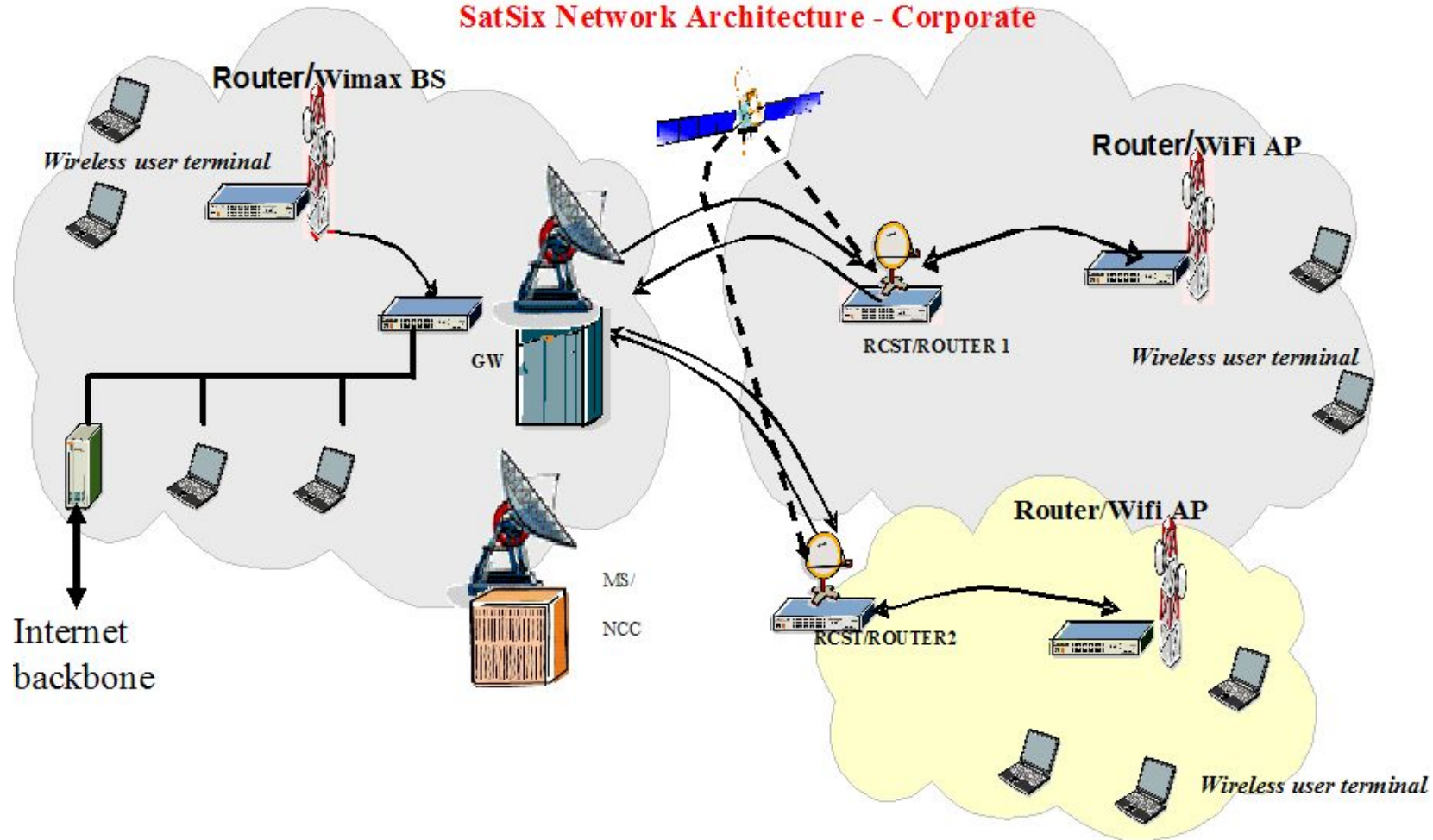
# Applying the Network Architecture

10

- ❖ Corporate application scenario
- ❖ Residential Application Scenario
- ❖ Collective access terminal scenario

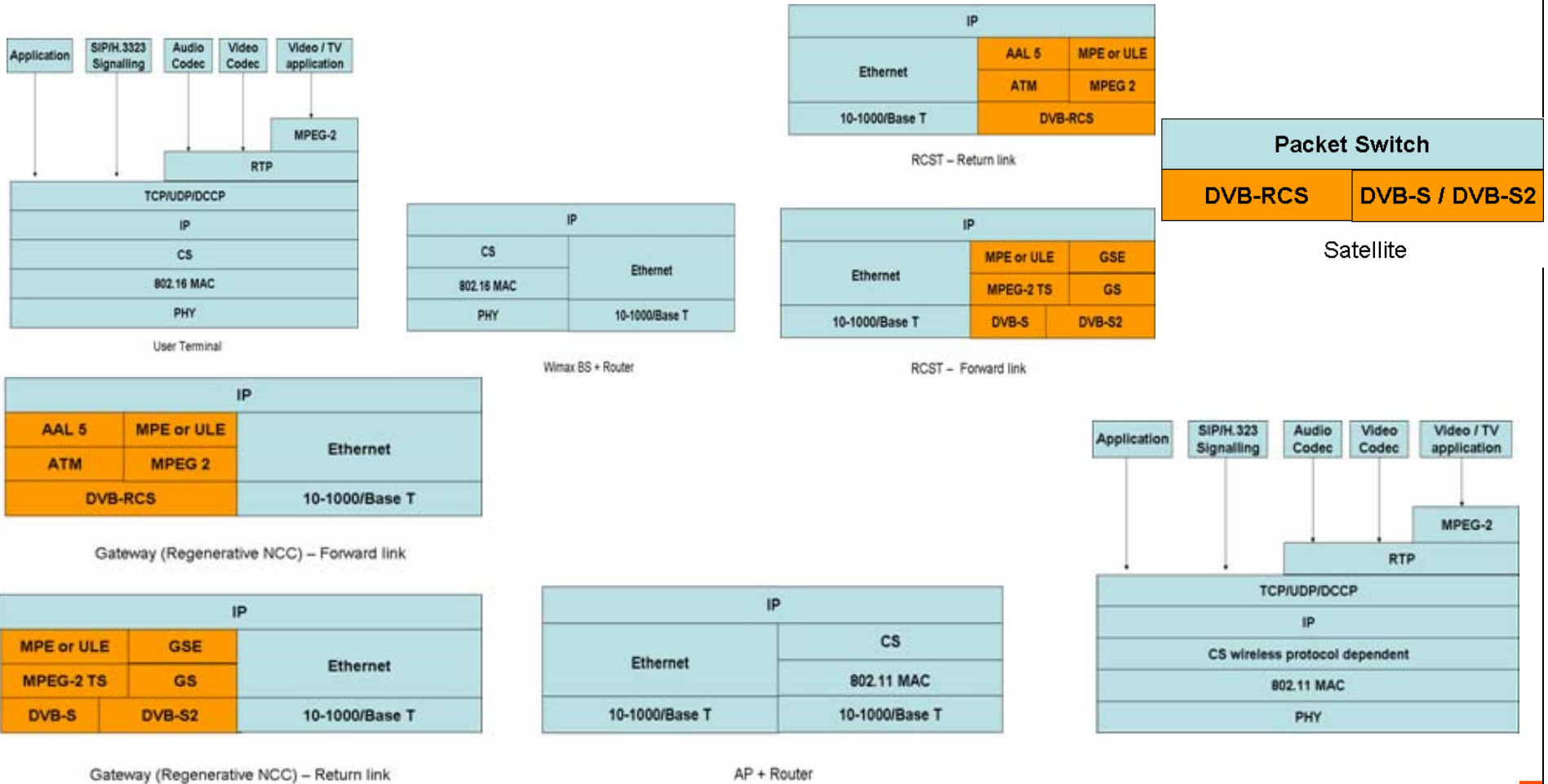
[back](#) [next](#)

## SatSix Network Architecture - Corporate





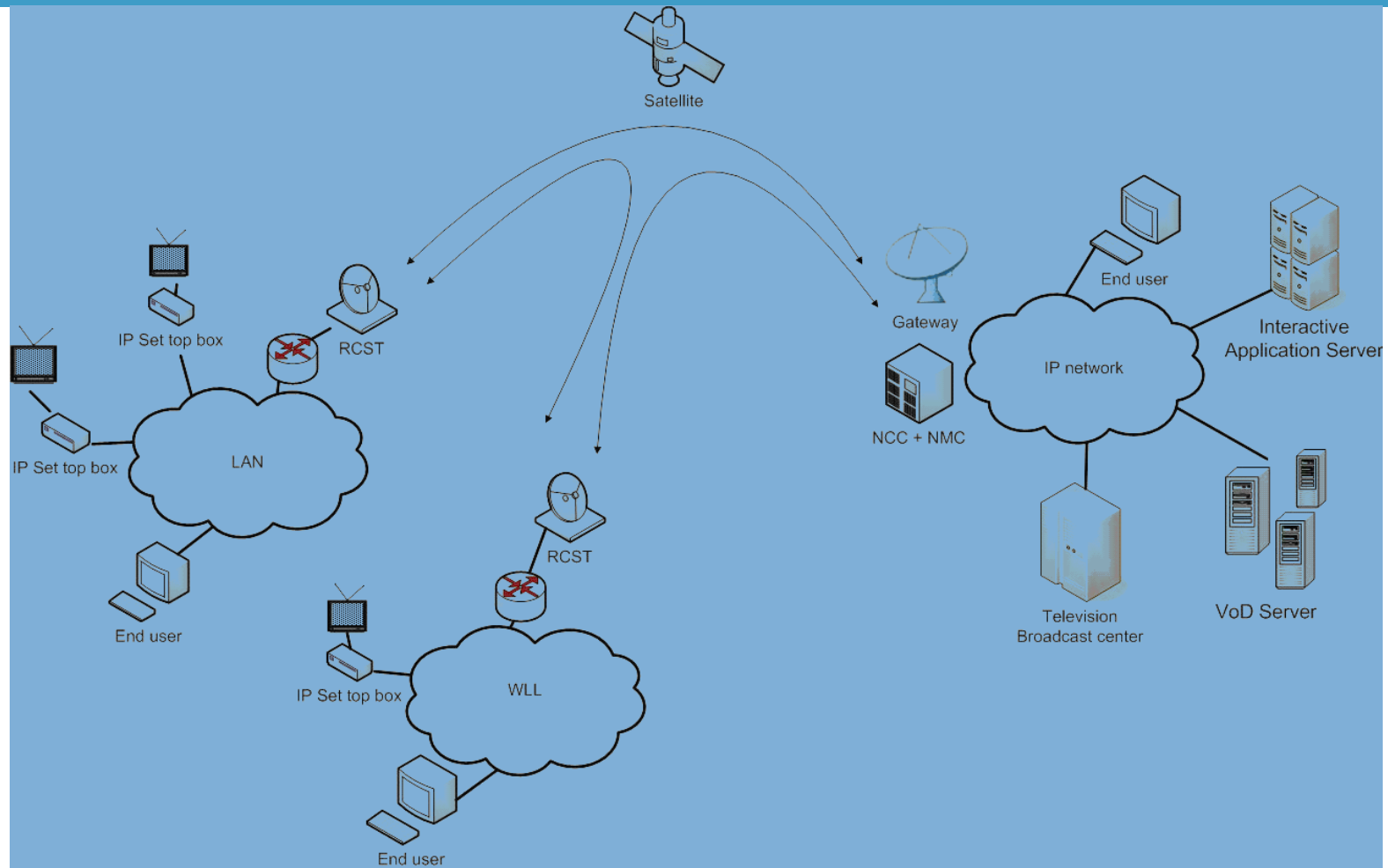
# Corporate Application Scenario





# Residential Application Scenario

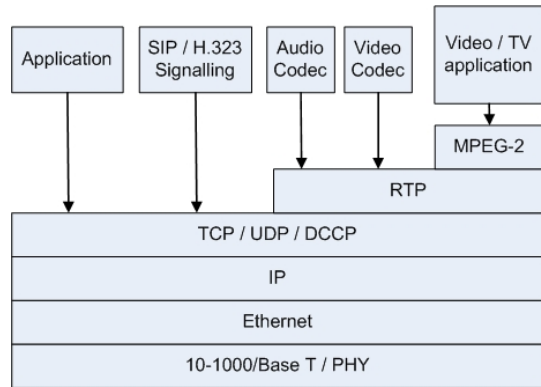
13



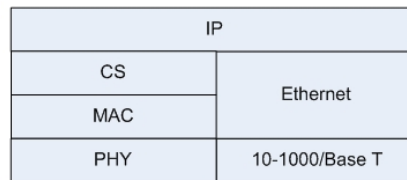
[back](#) [next](#)



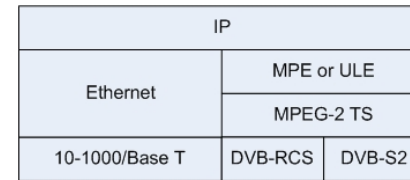
# Residential Application Scenario



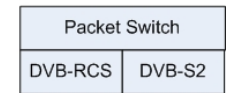
End User



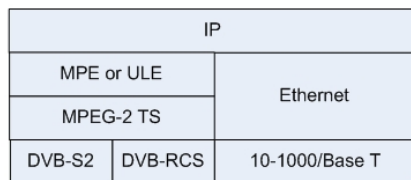
WiMAX BS



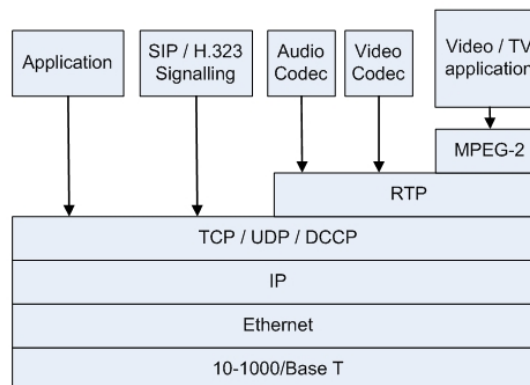
RCST



Satellite

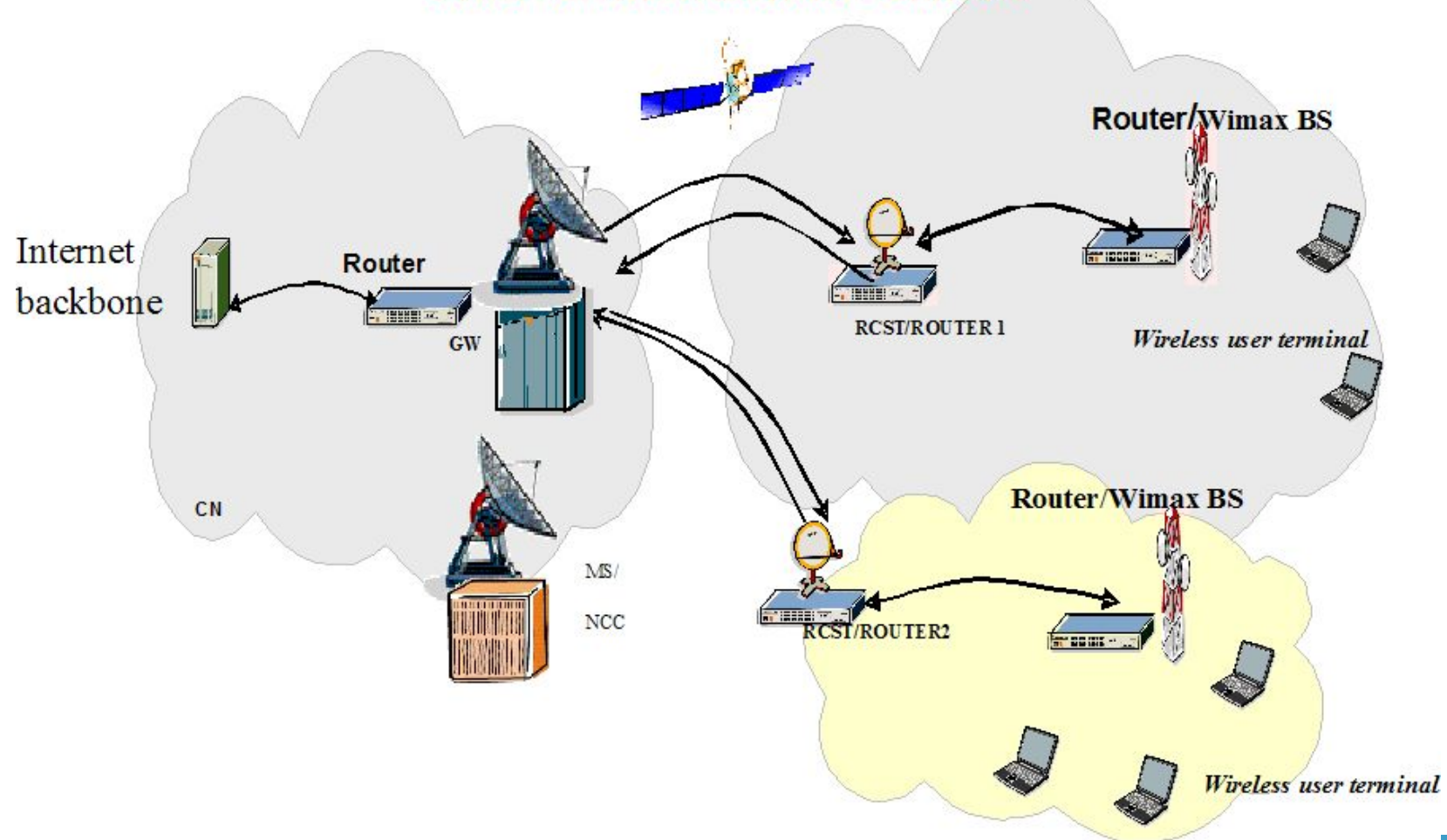


GW / NCC



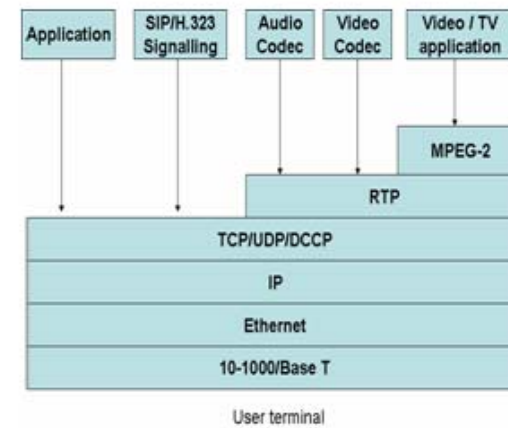
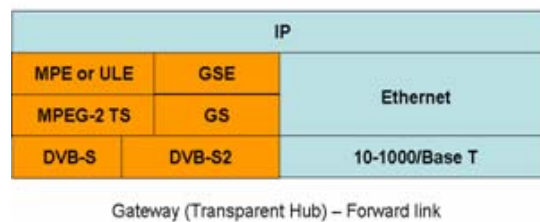
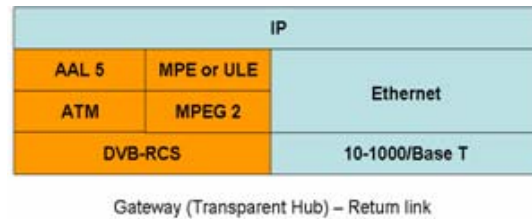
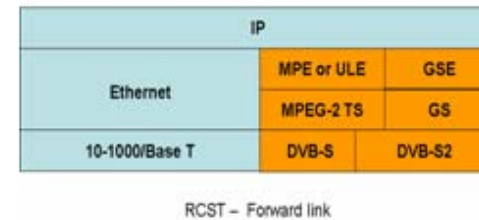
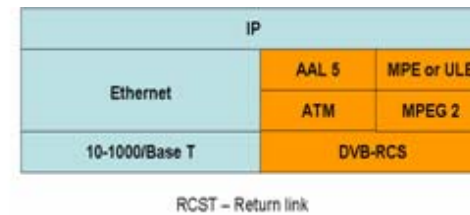
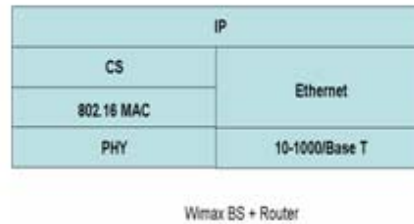
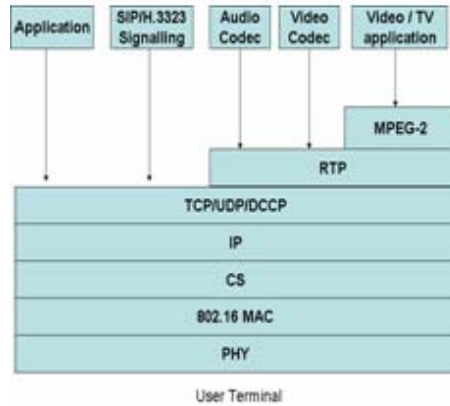
End User

## SatSix Network Architecture - Collective





# Collective Access Terminal Scenario





- ❖ The SATSIX network architecture, which support IPv6 and can integrate hybrid satellite and wireless local loops (WiFi and WiMAX) to provide low-cost universal broadband access, is proposed.
- ❖ The overall network and functional architectures have been presented.
- ❖ Three scenarios that the network architecture will be applied are introduced.