Subproject 2:

Next-Generation Optical Internet and

QoS Technologies

First Meeting

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Outline

- High-performance Optical Packet Switched Metro Area Network (HOPSMAN): Technologies and Experimentation
 - Project at a glance
 - Major Tasks and Status
- QoS Technology
 - Major Tasks
 - Accomplishment and Status

Project at a Glance



Major Tasks of Year 2004 and Beyond



- Design of optical metro network architecture
- Design of AN architecture and control
 - MAC scheme with QoS
 - Access node architecture
 - Optical subsystems
- Design of optical access network architecture and control
 - MAC scheme with triple play support
 - Optical subsystems
- Traffic engineering/traffic grooming
- Design and construction of an Optical metro/access network including all above

Optical Node Architecture



QoS Technology: Major Tasks

- N-in-1 Security and QoS Gateway
 - Network Layer: NAT, Firewall, VPN, BW Mang, ...
 - Content Layer: L7 Firewall, CF/Keyword, Anti-Spam,
 - IXP 425 platform
- Performance of Content-aware Gateway
 - 4-in-1 Proxy Architecture: Spam+ Virus+ IDS+ CF
 - Fast Accurate CF: Early Decision+ Oriental
- Request Scheduling for Differentiated QoS
 - Website gateway
 - Access gateway

Accomplishment and Status

Accomplishment:

Intg.	Content-aware Security and QoS Gateway	12-in-1: L7 Firewall, CF/Keyword, Anti-Spam, Anti- Virus, IDS
New	4-in-1 Proxy Architecture	 Integrate open source packages compactly Throughput X 2
	Early Decision Algorithm (patent pending)	 Request Processing Throughput X3 - ¹/₄ User latency
	Keywords of Oriental Lang.	Accuracy of blocking adult web pages (69.7%->97.2%)

Status:

N-in-1 Gateway	Useful and interesting: L7 firewall, UPNP, Wireless AP
Performance	- Streaming-based Mail Proxy - Content security processing on IXP
Differentiated QoS	Multi-Resources Req Scheduling, Requestized-GPS