

INFORMATION SCIENCES INSTITUTE 4676 Admiralty Way Marina del Rey, CA 90292

Smart WDM IP Flow Technology (SWIFT)

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Joseph Bannister and Joseph Touch

Information Sciences Institute

University of Southern California

Alan Willner

Department of Electrical Engineering

University of Southern California

WDM Technology Meets IP Switching

IP switching is preferable to static wavelength assignment

Compared to wavelength routing, IP processing is very slow

Limited number of wavelengths and expense of wavelength conversion make full-function IP switching unfeasible

By introducing a modest amount of optical processing, we can strike a reasonable balance



Functional Architecture



Software Architecture

Use large existing base of Internet software

Some new software development is required

-Signaling

-Flow detection

-Switch scheduling

-Drivers and test tools



Contention Resolution

Optical switching requires the resolution of contention when the same wavelength is used by different flows





Optical Header Rewriting

Fast label switching requires header rewriting in the optical domain



Packet Synchronization

