COMMITTEE T1 – TELECOMMUNICATIONS
T1X1.5 **T1X1.5/2001-112**
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CONTRIBUTION TO T1 STANDARDS PROJECT

TITLE	**Slide Presentation for T1X1.5/2001-098**	
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ABSTRACT

This document contains the slide presentation for T1X1.5/2001-098.

Notice

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On SRLG for Diversity and Risk Assessment
(ANSI T1X1.5/2001-098)

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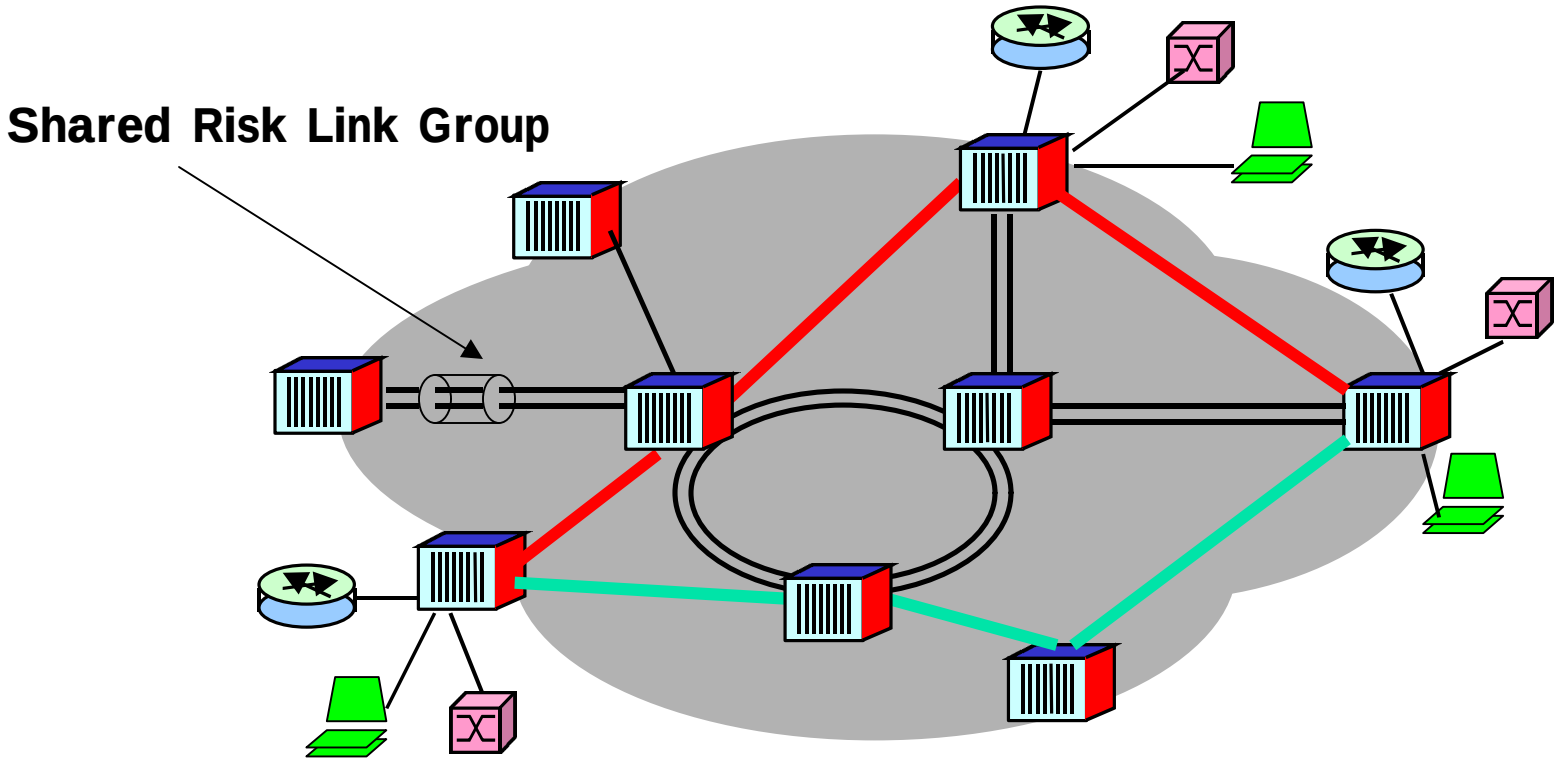
NAYNA Networks

Outline

- Shared Risk Link Group (SRLG)
- Path Diversity
- Goals
- Risk assessment
- Risk Assessment Steps
- Steps in Achieving Diversity
- Requirements
- Extensions
- Conclusions

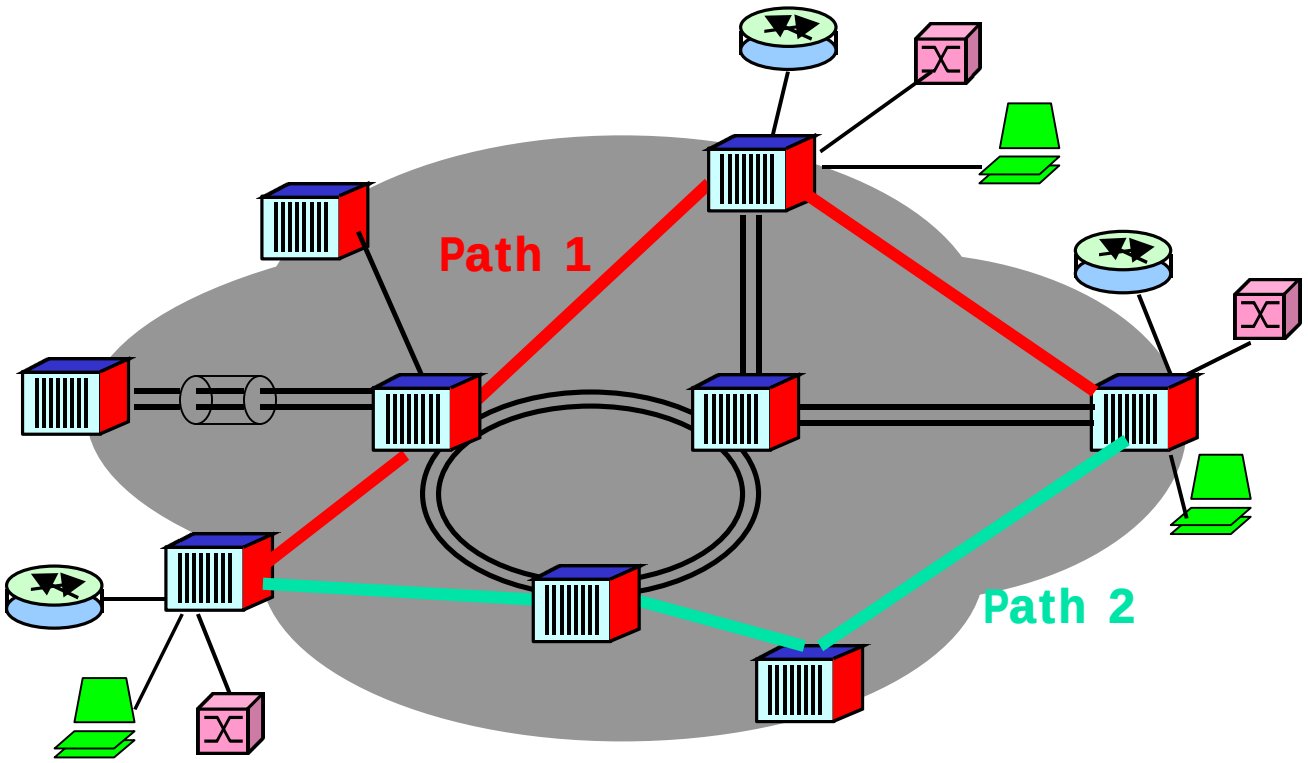
Shared Risk Link Group (SRLG)

- Group of links sharing the same risk
- A link may be member of many SRLGs



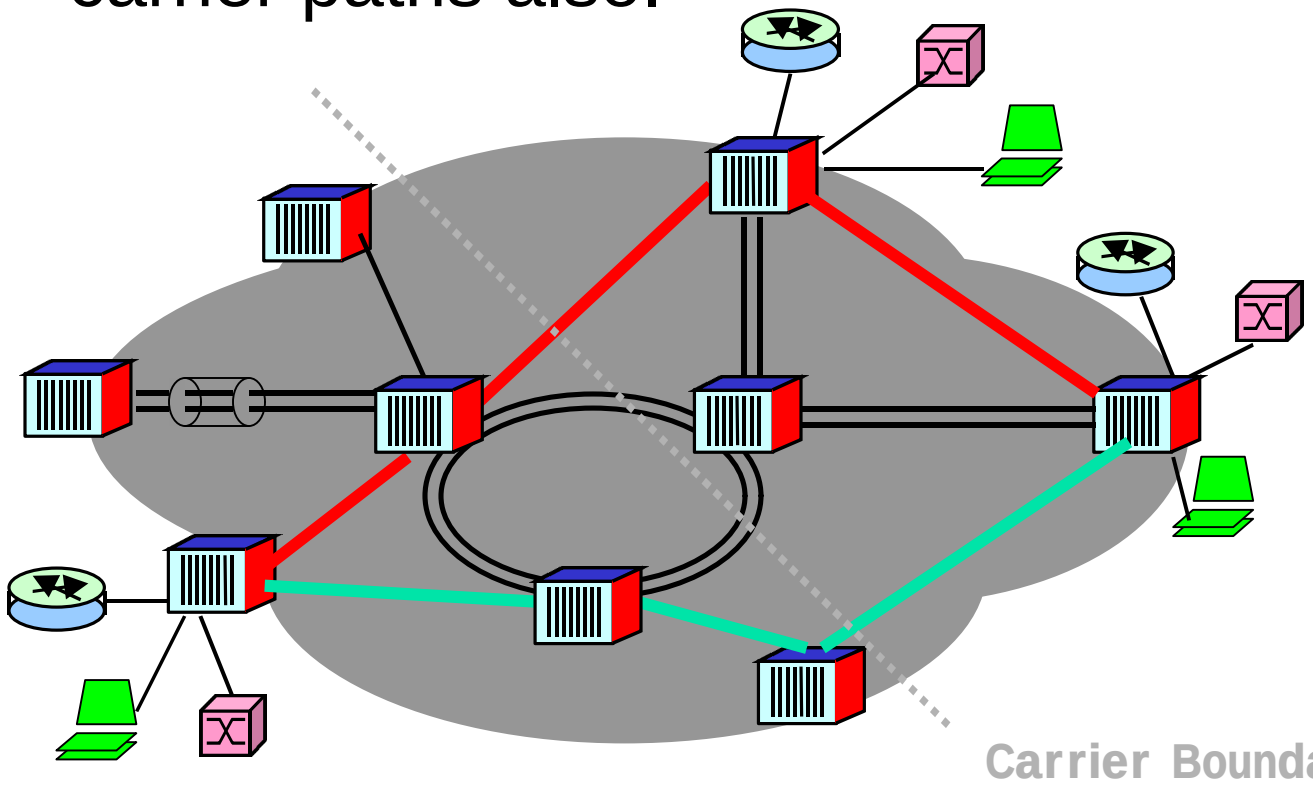
Path Diversity

- Two paths not sharing the same risk
  - Setup(Path2, diverse from path1)



Path Diversity (Cont)

- Diversity requirement may apply across multi-carrier paths also.



Goals

- Automate path computation for diversity and risk assessment
- Reduce the amount of information exchanged: Summarization of SRLGs

Risk assessment

- Risk assessment: Evaluation of the potential risk associated to the inclusion of a given resource in a given path.
  E.g., Risk Factor = P(Fault)
  Weight Factor =Preference for a resource

Risk Assessment Steps

- User specifies availability requirements
  (Not in the scope of this document)
- Assign the risk factor and weight factors to physical and logical resources
- Propagate the above-configured information using routing protocols
- Use the above information in path computation
  E.g., Risk of path <1, 3, 5> = Risk 1 x Risk 3 x Risk 5

Steps in achieving diversity

1. Topology: Rings, mesh, domains, …
2. Constraints:
   - Inclusive: E.g., Domain topology
   - Exclusive: E.g., Link or node types
   - Limiting: E.g., Bandwidth
3. Output:
   - Path Availability
   - Maximum diverse path
   - Loose or strict route

Requirements

- Encoding
  - Logical and physical structure in SRLG
  - Summarizable encoding mechanism
- Capability
  - Domain, node, link capability associated to SRLG
  - Risk assessment parameters
  - Preferential route selection parameters

Extensions

- Routing protocol
  - Domain topology and inter-domain link information propagation
  - Scoping this information to reduce flooding
- Path Computation Algorithms, e.g., CSPF
  - Extend to optimize risk and use new constraints

Conclusions

- SRLG:
  - For diversity
  - For risk assessment
  - Applies to links, nodes, domains
- Extensions Required for routing protocols:
  - Propagation of SRLG information
  - Use in path computation