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# **New Source Rules and Satellite Links**

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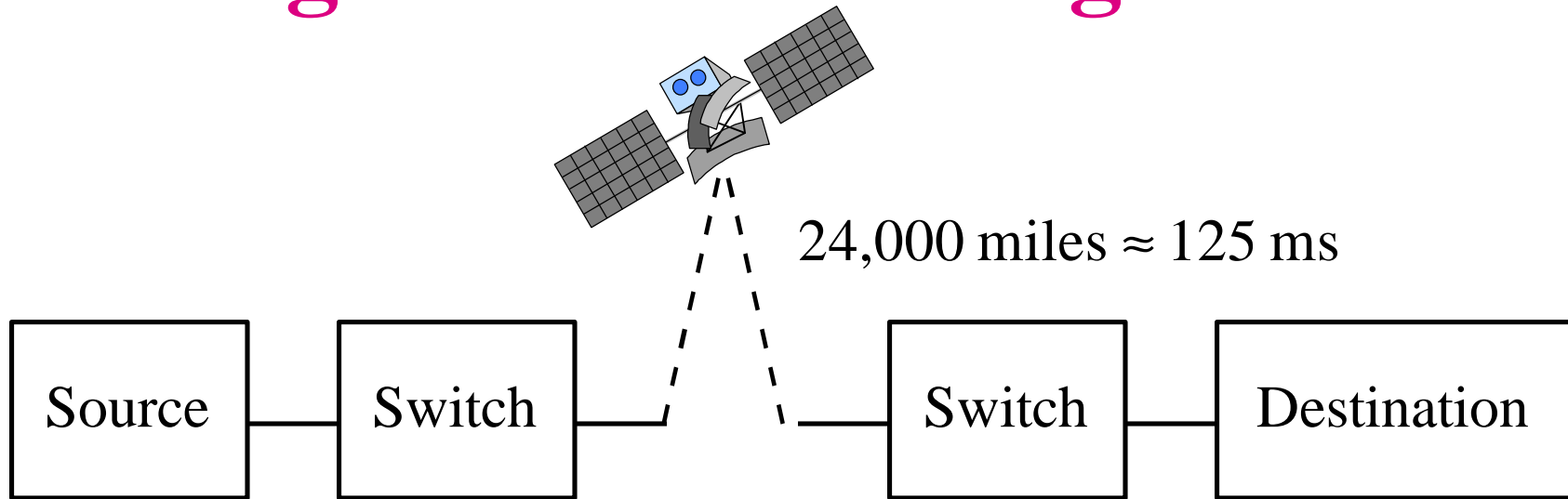
# Effect of XRM

- ❑ It was shown in August [1]:  
If XRM is low, rule 6 is triggered repeatedly leading to oscillations and a net throughput of 50 Mbps on a 155 Mbps (or even higher speed) link
- ❑ Conclusion: XRM width should be increased.
- ❑ [1] AF-TM 95-0972R1, “Parameter Values for Satellite Links,” August 1995.
- ❑ Effect of CIF
- ❑ Also in August meeting: XRM signalling was replaced by CIF signalling.
- ❑  $XRM = \text{Min}\{CIF/N_{rm}, PCR * RTT / N_{rm}\}$
- ❑ Goal: To verify that satellite links can be efficiently used under the new rules.

# Problem

- ❑ Previously, XRM directly controlled the oscillation. User could guarantee no-oscillation by setting Xrm to 6144 or higher
- ❑  $XRM = 6144$   
 $\Rightarrow CIF = XRM * NRM = 196608$
- ❑ Even with  $CIF=196608$ ,  $XRM=6144$ , oscillations can be caused by TOF decreases
- ❑ The problem happens only if the VC is setup during congested period

# Single-Source Configuration

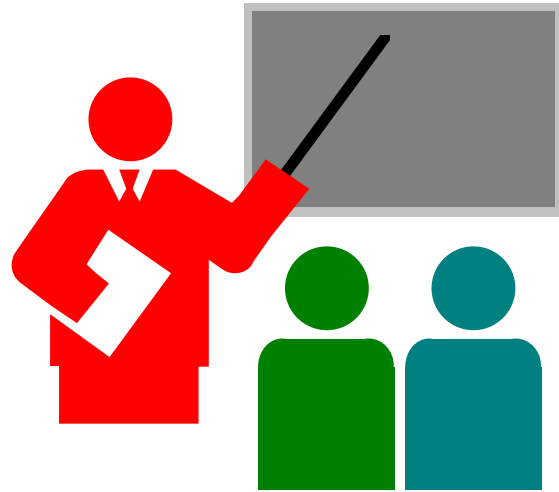


- ❑ All links 155 Mbps,  $ICR = 0.9 \times PCR$
- ❑ Goal: If the scheme has problem with single-source, it will have problems with more complex configurations

# Simulation Parameters

- Source: Parameters selected to maximize ACR  
Nrm = 32  
AIRF=1  $\Rightarrow$  AIR = PCR/Nrm  $\Rightarrow$  ACR is not limited by AIR  
RDF= 512 cells  
{TDF, PNI} = {1/8, 0} or {0, 1}  $\Rightarrow$  Rule 5 on or off  
CIF = 196608  
RTT = Propagation delay  $\times$  multipliers of 1, 10 or 110  
XDF = 1/2
- Traffic: Bidirectional
- Switch:  
Target Utilization = 90%  
Averaging interval = min{30 cells, 200  $\mu$ s}

# Summary



- ❑ XRM should be directly negotiated or its dependence on RTT should be removed.