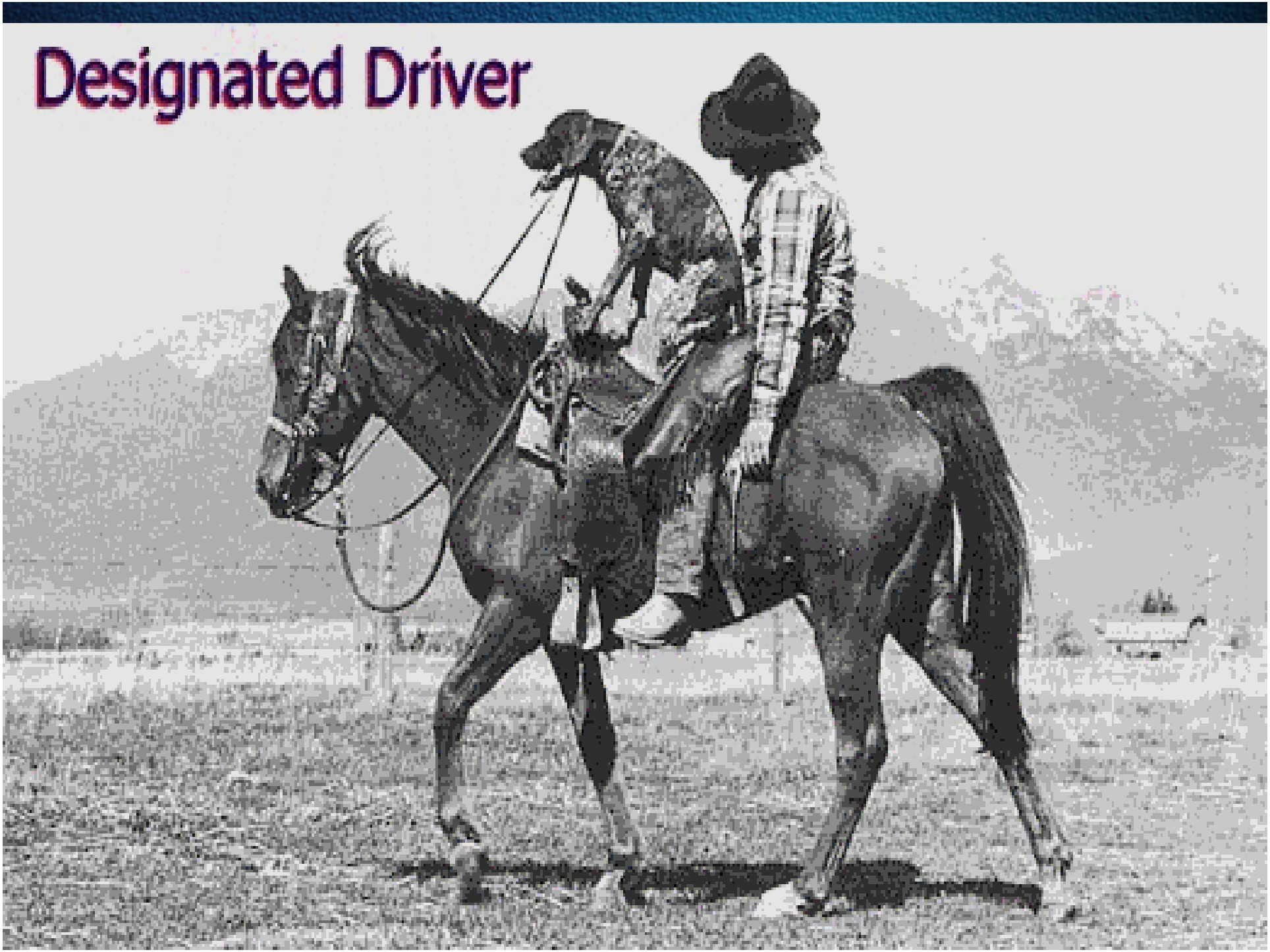
Mobile Router IOS Feature

Dan Shell CSE

Advanced Technology

CISCO Systems Federal

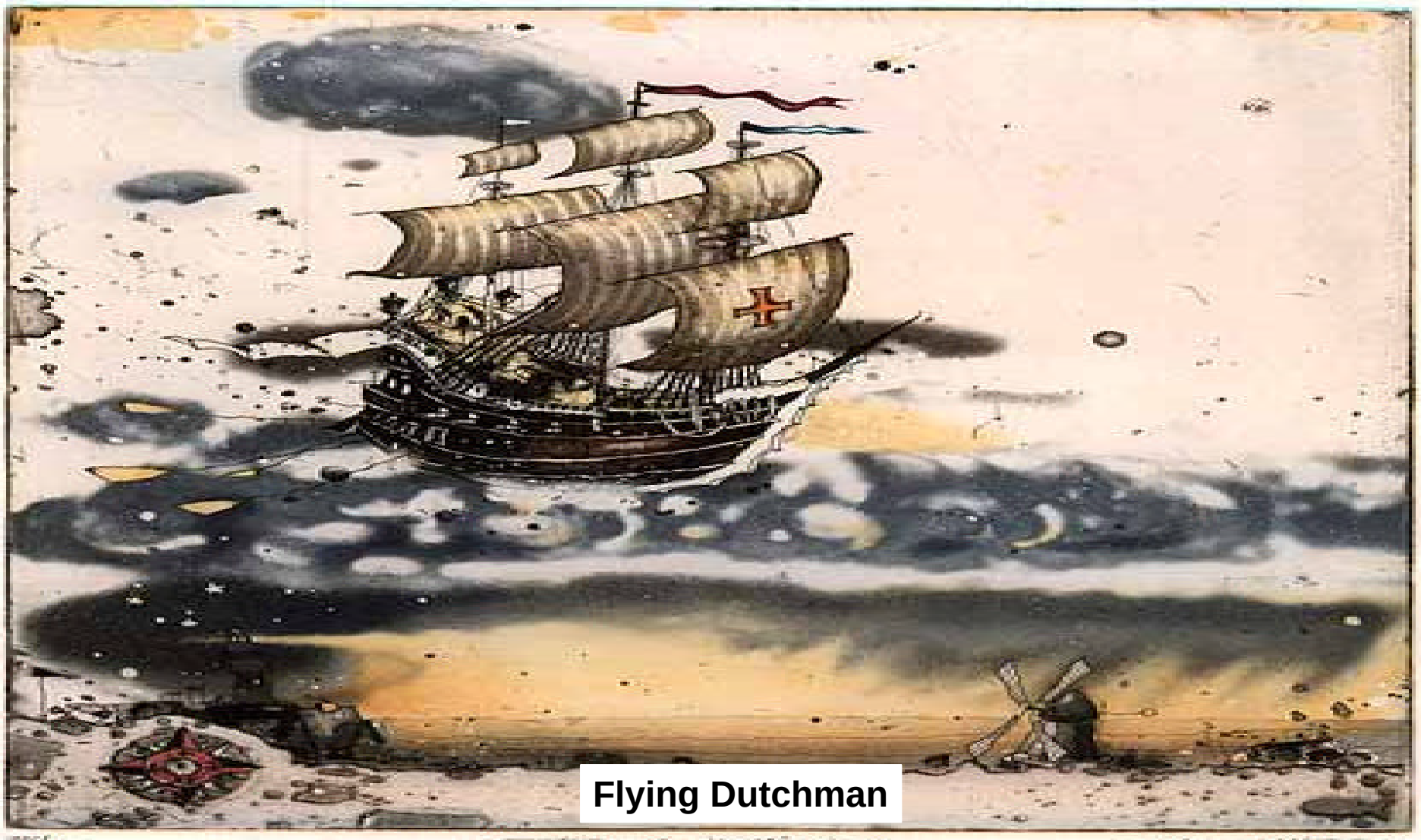
Designated Driver



Mobile Router IOS Feature Agenda

- What is Mobile Router
- Mobile Router terminology
- Mobile Router Features/Platforms
- Mobile Router Uses
- Mobile Router roadmap
- Summary

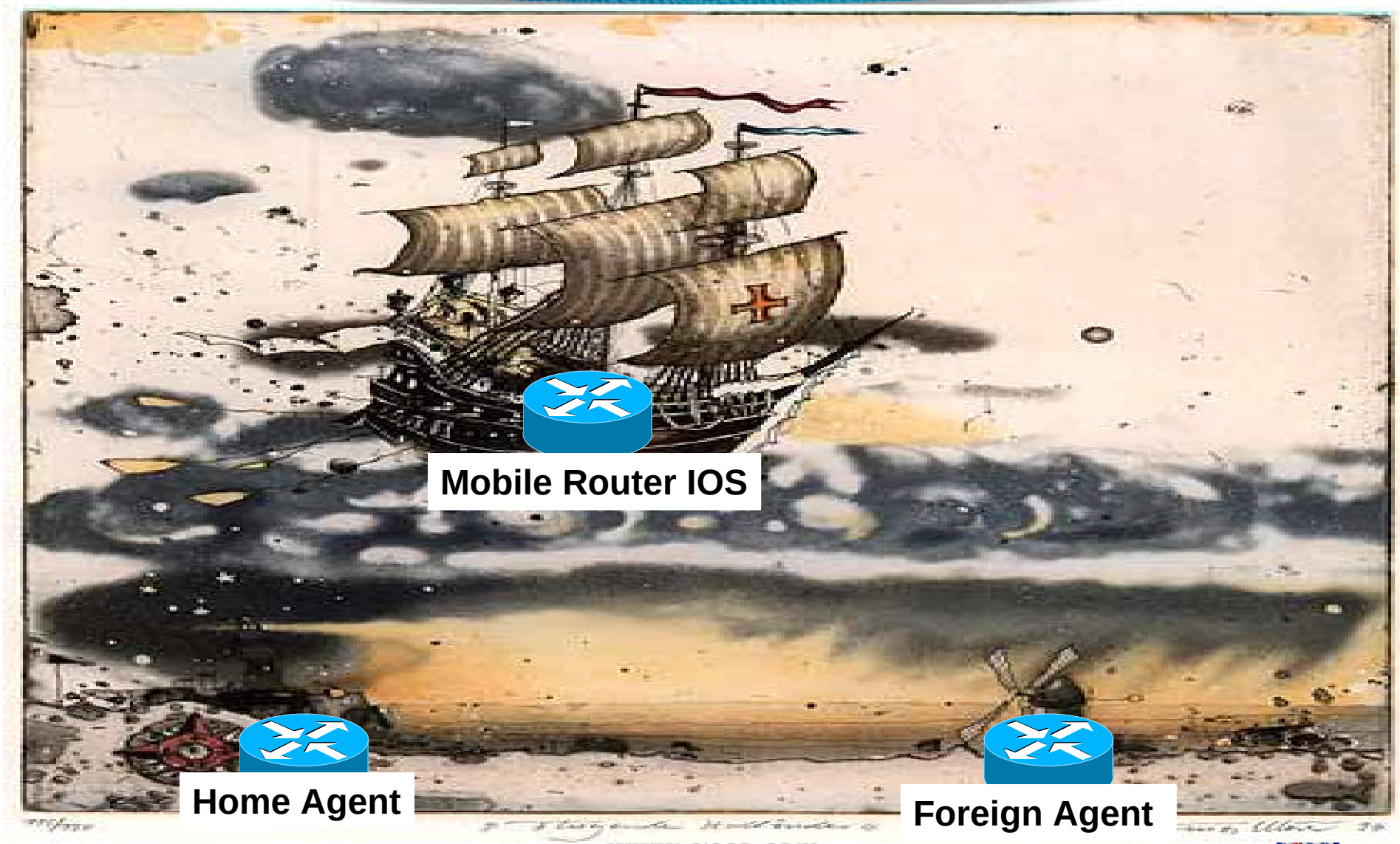
What is Mobile Router IOS?



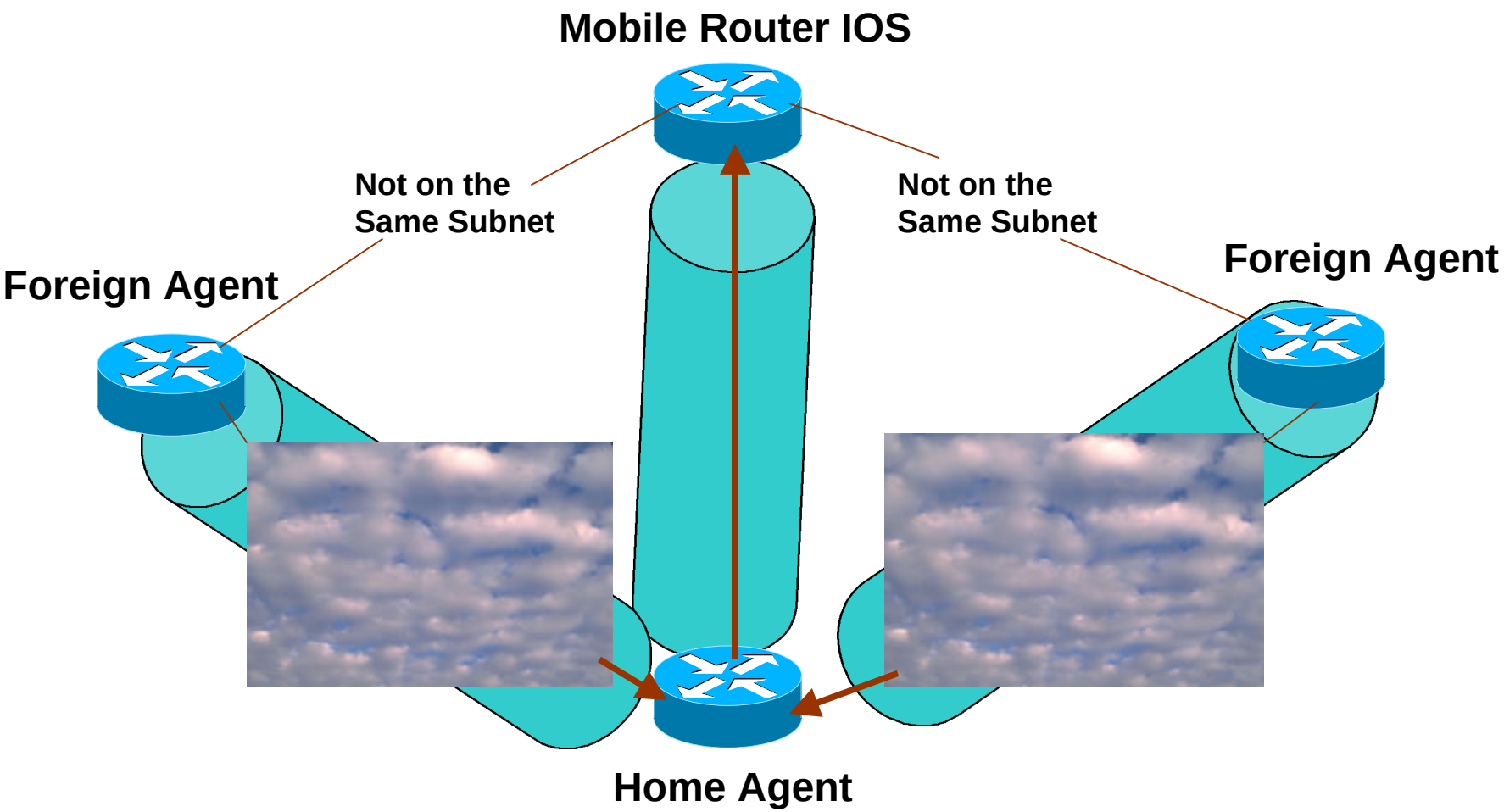
Flying Dutchman

Networks in Motion (tm)

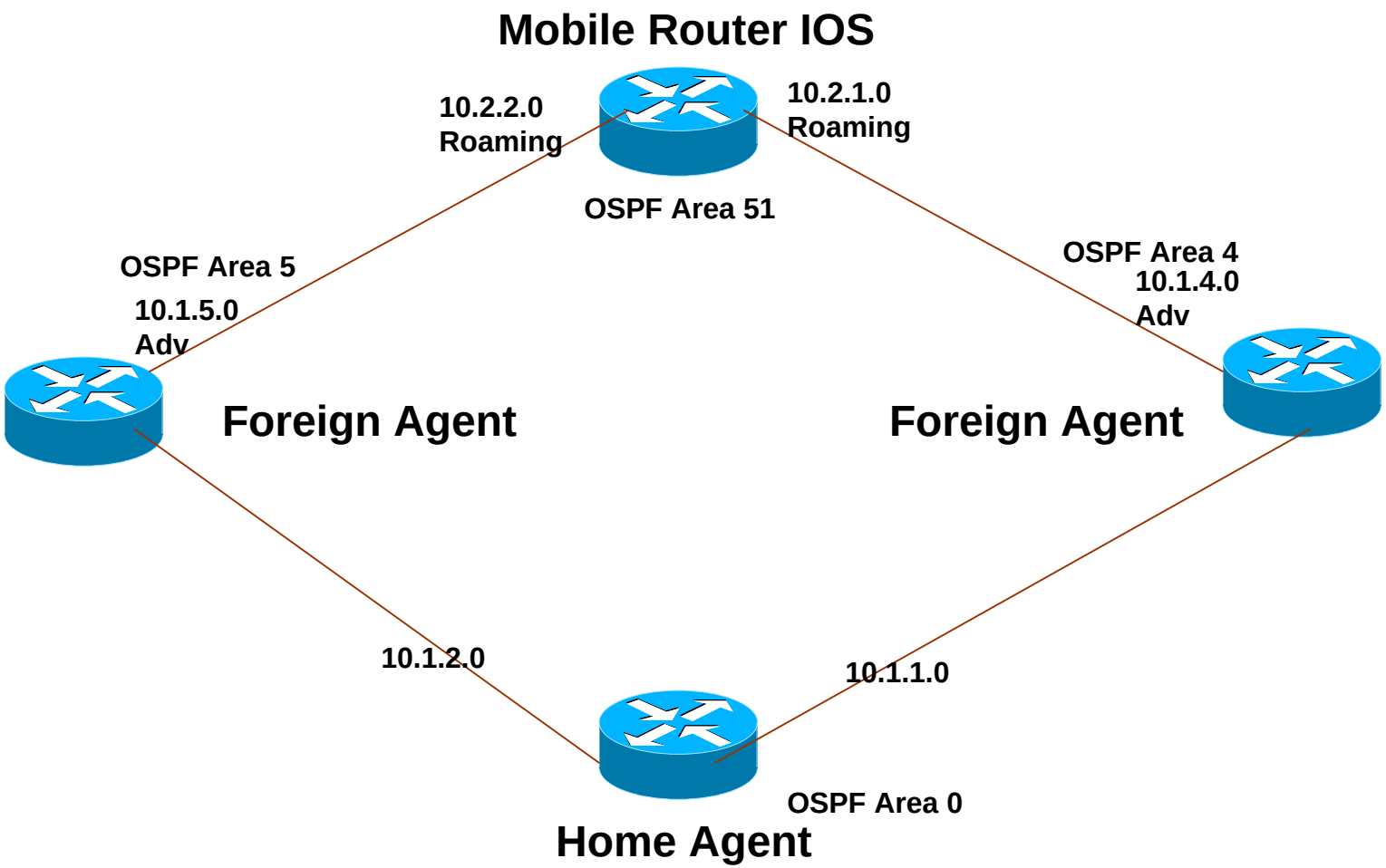
What is Mobile Router IOS Terminology



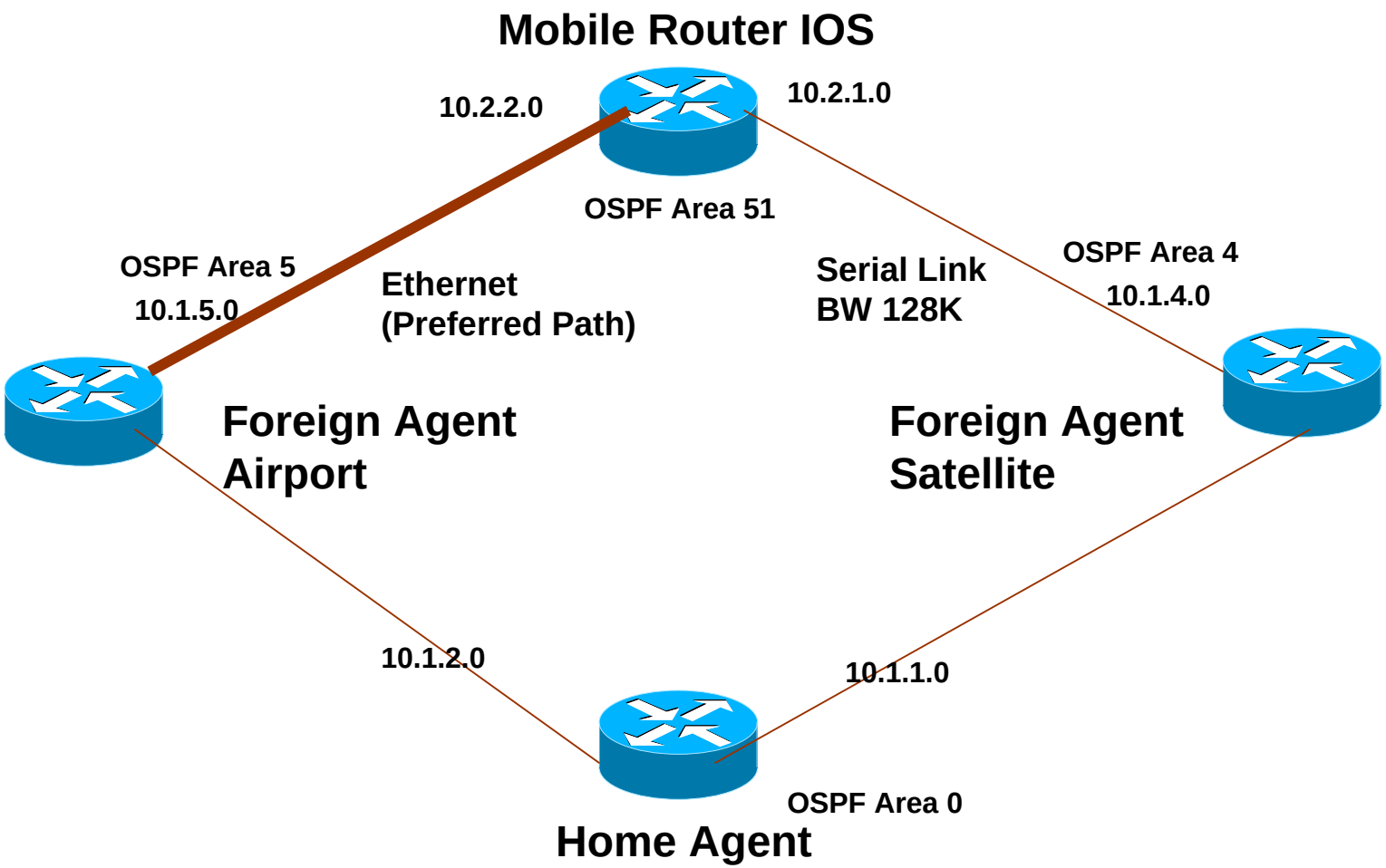
Mobile Router IOS Terminology



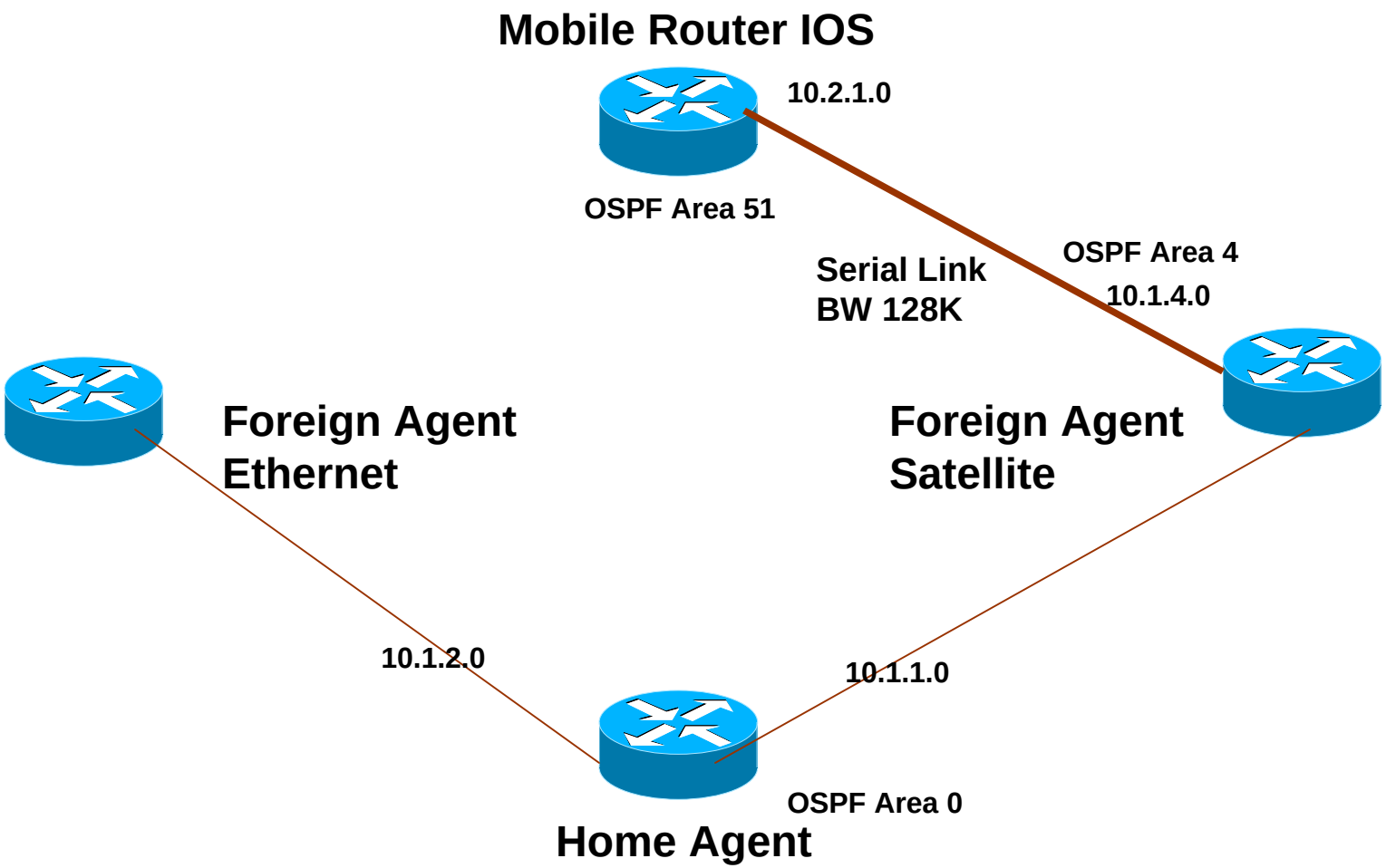
Mobile Router IOS Feature



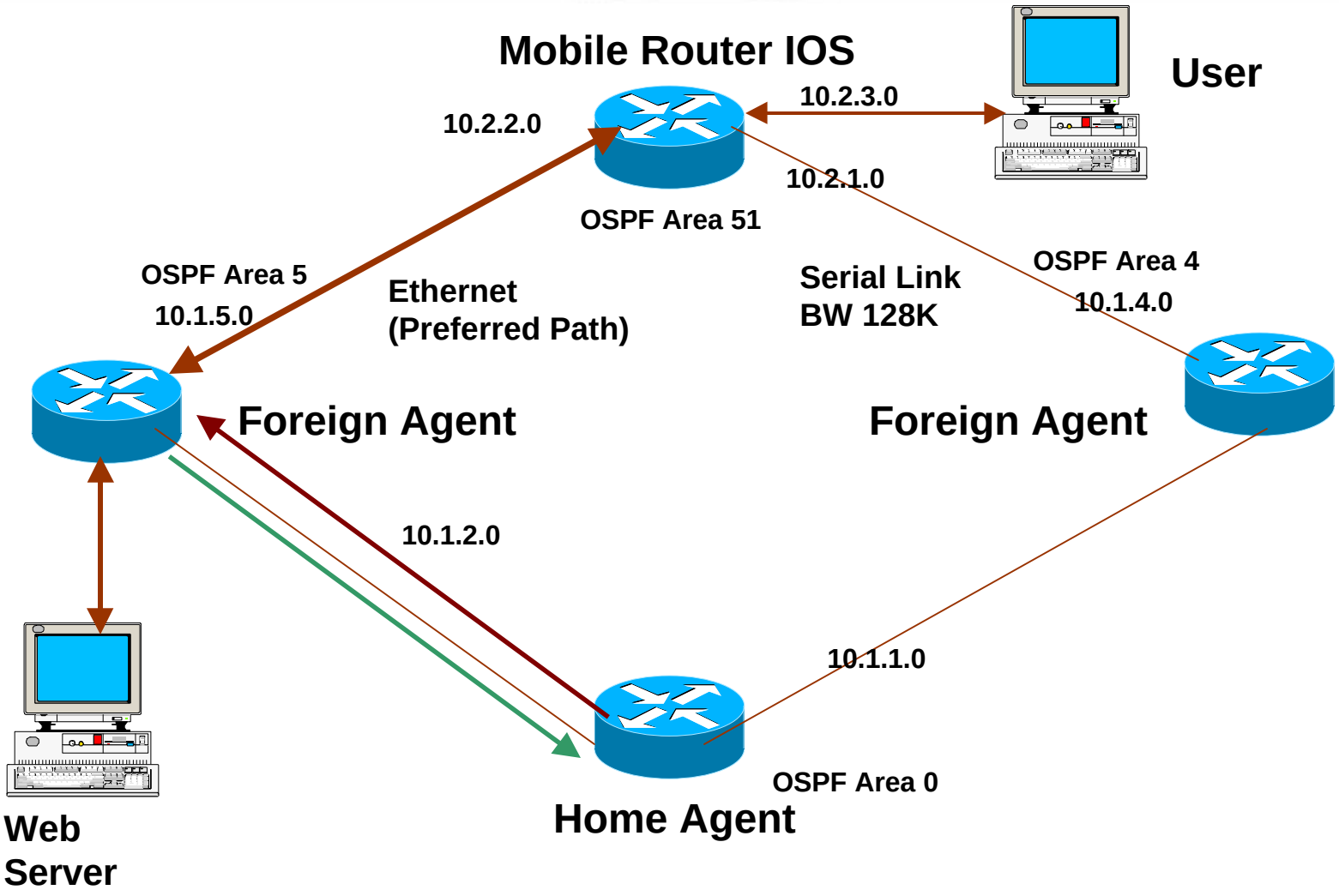
Mobile Router IOS Feature
Preferred Path



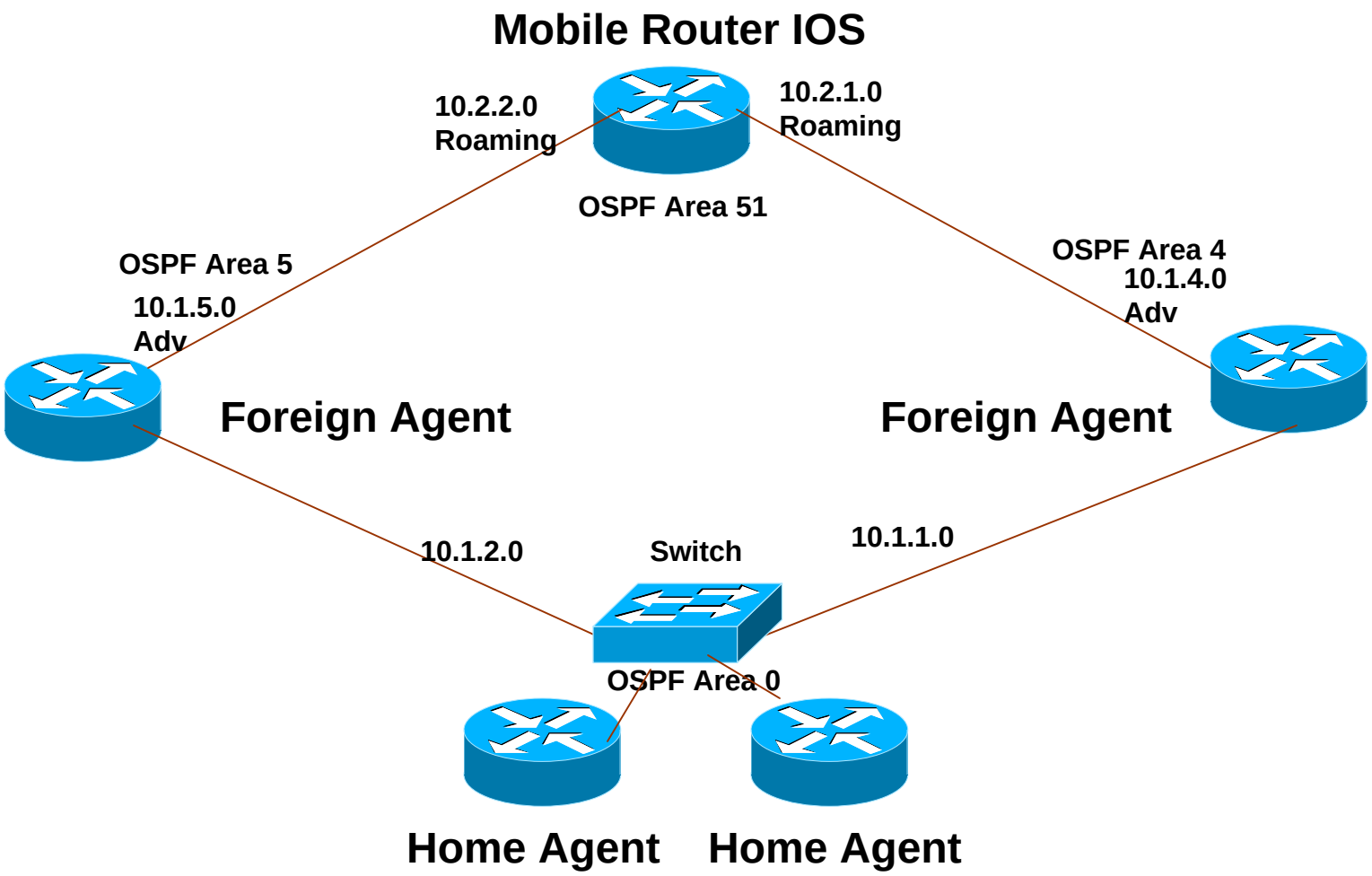
Mobile Router IOS Preferred Path



Mobile Router IOS Feature Data Path



Mobile Router IOS Feature Redundant Home Agents



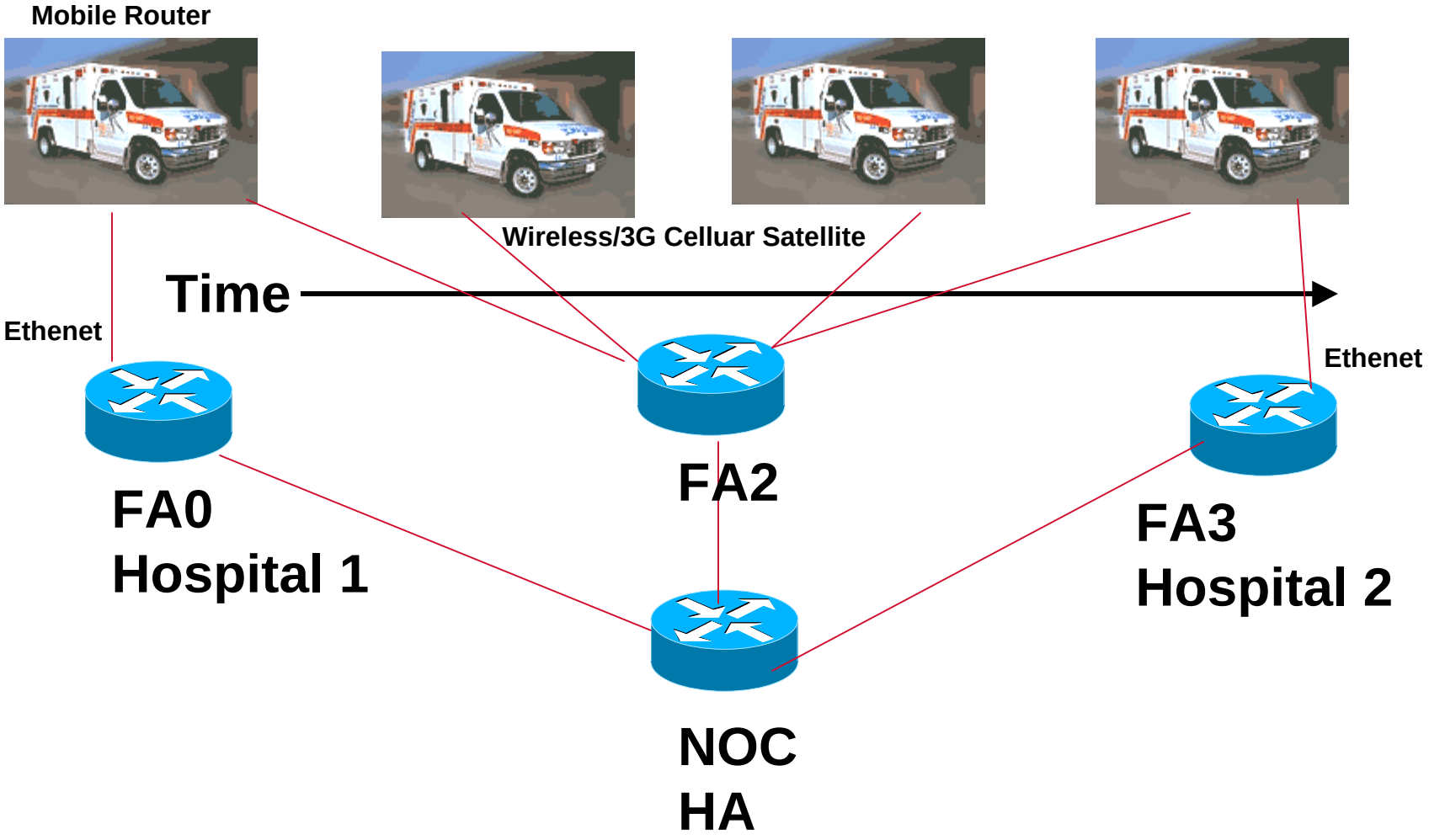
MR Supported Platforms

- CISCO 2600
- CISCO 3600
- CISCO 7200
- CISCO 7500

Mobile Router IOS Road Map

- **UDLR Support**
- **Multicast Support**
- **IPSEC between MR and FA**

Mobile Router in Time



Mobile Router uses

Mobile Router

Carrier Battle Group

Foreign Agent

Mobile Router

Mobile Router

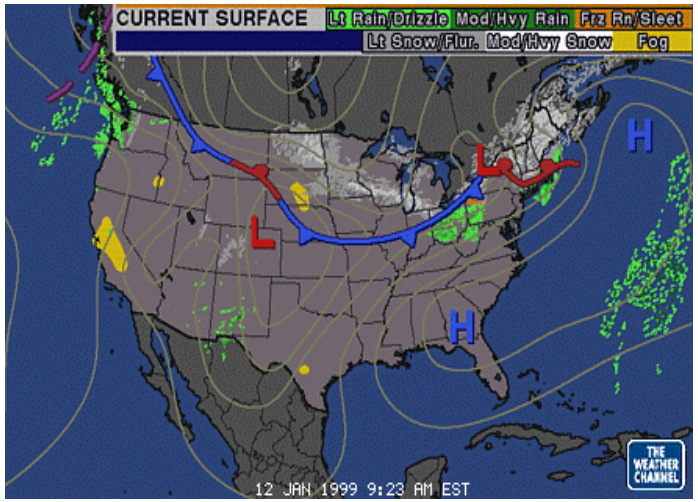
Home Network

Mobile Router

Mobile Router uses

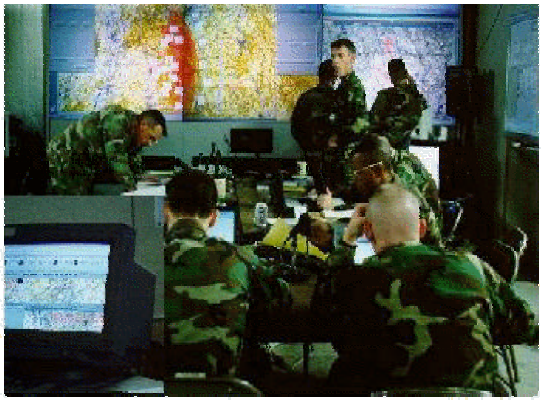
Mobile Router

Graphical Weather



Mobile Router uses

Mobile Router



Home Network
with FA Routers

Mobile Router

Mobile Router

Mobile Router uses

Time

Ethernet

Ethernet

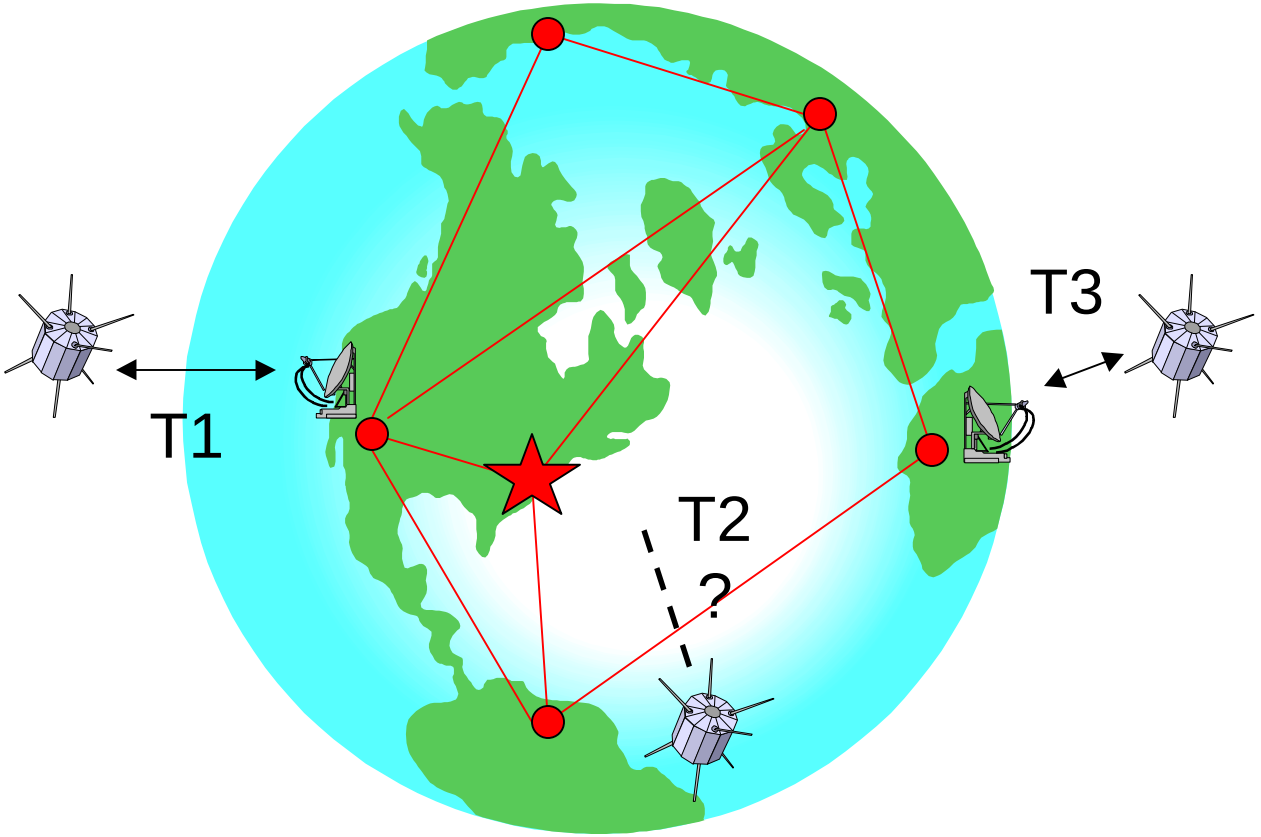
FA

FA
Port A

FA
PortB

NOC HA
Carnival Cruise

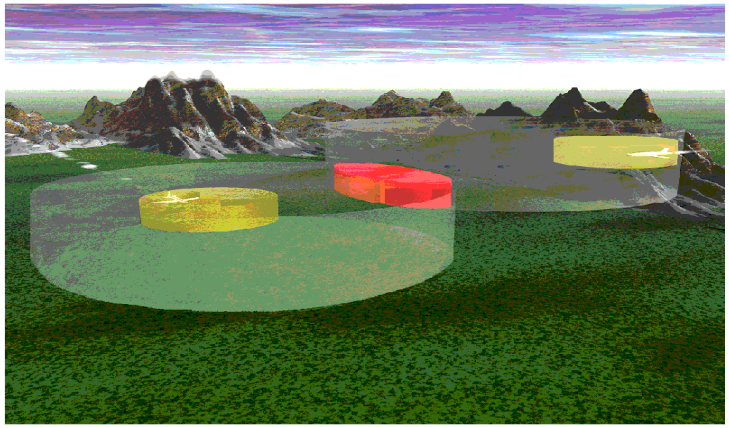
Earth Observation

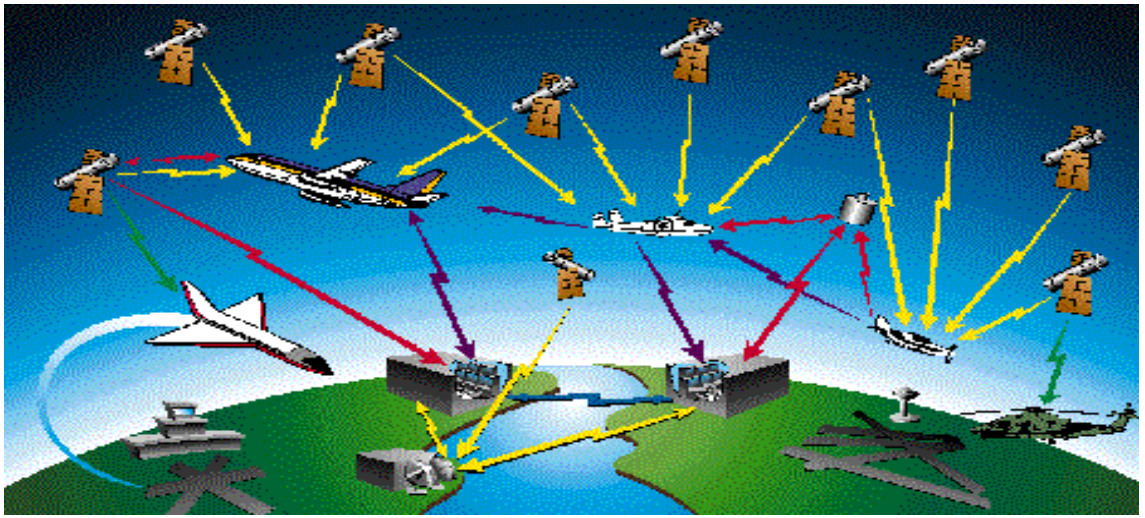


AATT AC/ATM

Advanced Communications for Air Traffic Management (AC/ATM)

The AC / ATM project is leveraging and developing advanced communications technology to enable Free Flight and provide global connectivity to all aircraft via broadband satellite communications in a global aviation information network.





Aviation Weather Today

June 3, 1998

THE NATION'S NEWSPAPER 50 CENTS

USA TODAY

NO. 1 IN THE USA . . . FIRST IN DAILY READERS

AUTHOR'S TALE TOLD FROM THE HAMPTONS

GAINES HITS HOME IN 'PHILISTINES', 1D

TROUBLED TEENS CHART NEW COURSE FOR LIFE ON WATERS OFF BALTIMORE, 7D

WEDNESDAY

By Robert Deutsch, USA TODAY

Steven Gaines: Latest offering sold out in the Hamptons, 1D

Report: Pilots get worse weather data than public

By Fred Bayles
USA TODAY

Airline pilots aloft may know less about the weather than somebody sitting at home watching TV weather reports.

In a report issued Tuesday, the General Accounting Office said the Federal Aviation Administration still does a poor job getting crucial weather data to pilots, information that could avoid everything from bumpy flights to crashes.

The report, based on recent criticisms, said technological advances have given forecasters a better understanding of changing weather conditions, but the information is still not readily available to pilots.

"One comment made at our panel was that you can sit in the cabin of a jet with a laptop computer and get better weather information than what the pilot up front has," says Robert White, the GAO's assistant director for aviation safety.

The report said meteorologists at regional air traffic centers seldom share information with controllers nearby.

"Everyone is so focused on what they are doing that they don't have time to talk," says James Sweetman, one of the report's authors.

About 30% of air carrier accidents stem from weather problems. In general aviation, which includes small planes and corporate jets, more than 80% are caused by weather.

The FAA says it is making progress, installing 37 high tech Doppler radar units at major airports around the country.

"We agree that improving the quality of weather information is critical," says FAA spokesman Hank Price.

▶ Deadly delays, 6A

Text Printout of Convective SIGMET

```
MKCC WST 221355
CONVECTIVE SIGMET 49C
VALID UNTIL 1555Z
IL IN KY
FROM IND-30SSW LOZ-60ESE FAM-IND
AREA TS MOV FROM 30030KT. TOPS ABV FL450.
CONVECTIVE SIGMET 50C
VALID UNTIL 1555Z
IL MO
FROM 20N BRL-40N DEC-50NE FAM-30N VIH-20N BRL
AREA SEV TS MOV FROM 29035KT. TOPS ABV FL450.
HAIL TO 1 IN...WIND GUSTS TO 50 KT POSS.
OUTLOOK VALID 221555-221955
FROM ORD-EKN-CLT-DYR-SGF-MKC-DSM-CID-ORD
TS CONTG TO MOVE THRU MID MS VLY/LWR OHIO VLY. AMS ALG/S OF
QSTNRY SFC FNTL BNDRY THRU CNTRL PLAINS SE TO NC CST RMNS MOIST
AND UNSTABLE. S-SWLY FLOW AT LOW LVLS INTSECTG BDRY OVR MID MIS
AND LWR OHIO VLYL HELPING TO MAINTAIN TS ACT. SOME WKNG
PSBL...HOWEVER...EXP NEW DVLPMNT IN THE 15Z TO 18Z HRS.
RFM
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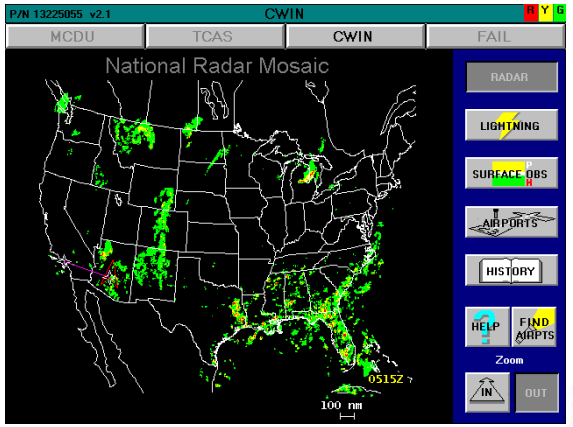
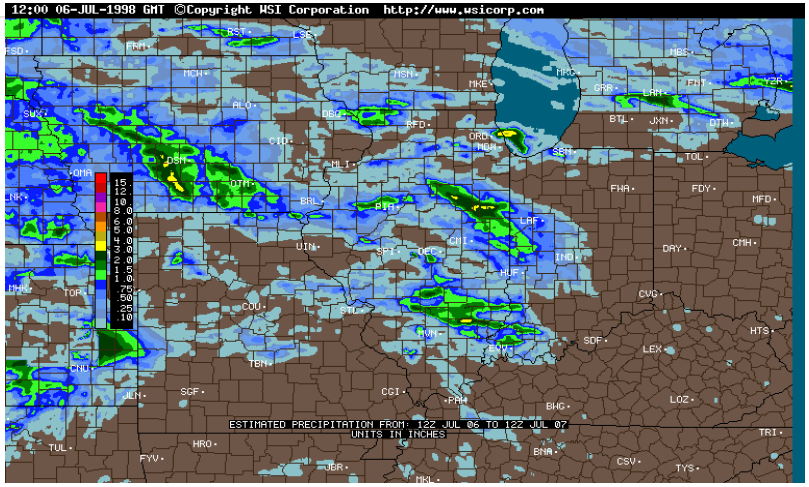
Cockpit Weather Presentation

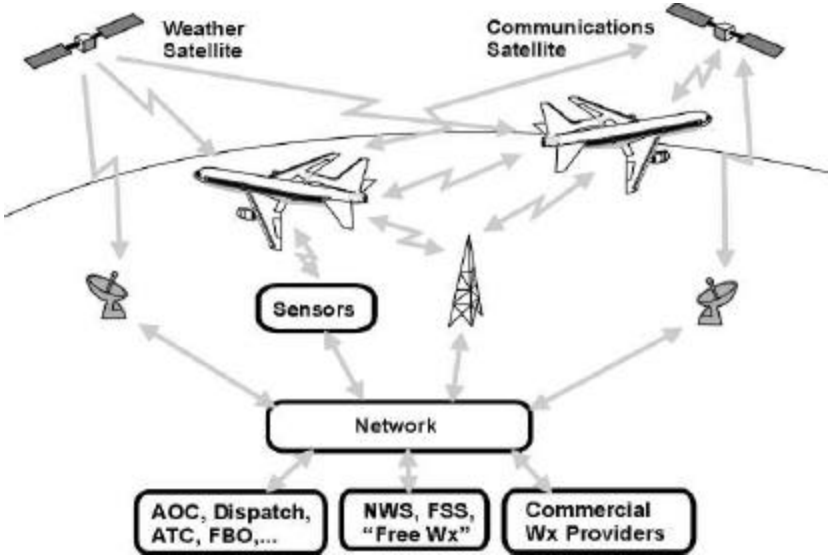


Weather Information Communications (WINCOMM)

GOAL:

Develop advanced communications and information technologies, with supporting standards definition, to enable the high quality and timely dissemination of aviation weather information to all relevant users on the global aviation network.





Weather is a major contributing factor in accidents

- 37% (Part 121)
- over 50% (Part 135S & NS)
- 48% (Part 91/133/137)
- 72% (International)

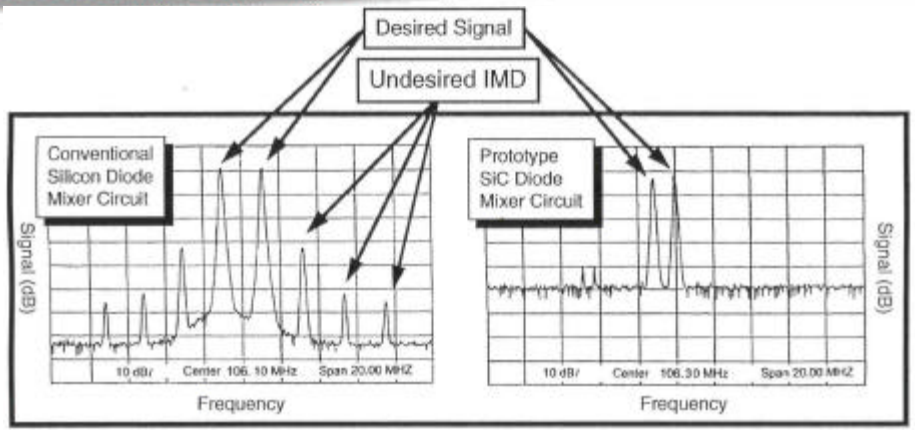
IT /AeroSAPIENT

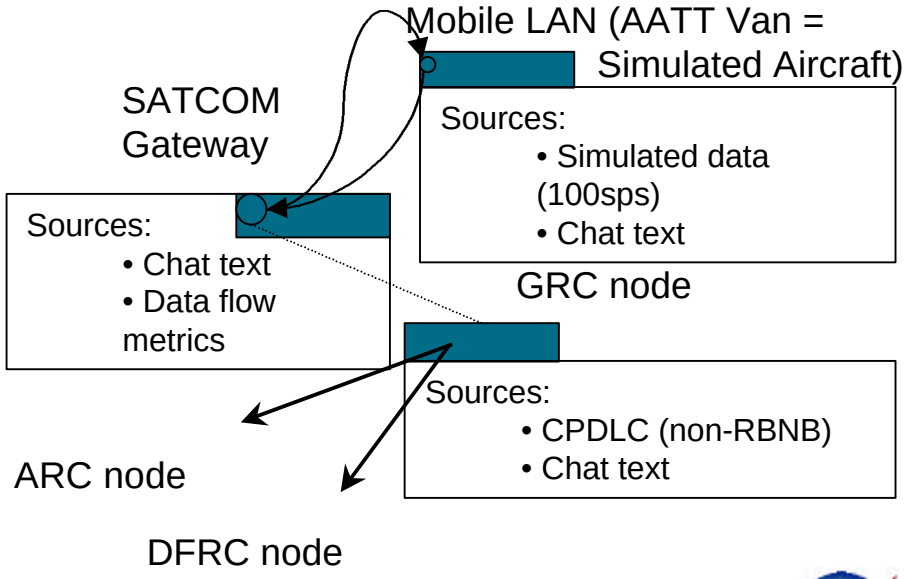
Satellite Assisted Process for Information Exchange through Network Technology

Project End Goal: **Demonstrate the feasibility of a scalable multi-protocol data sharing environment with information integrity and security.**

Secondary Objectives:

- **Develop advanced technology Aeronautical experimental testbed (DC-8).**
- **Develop and validate high risk/high impact technologies.**

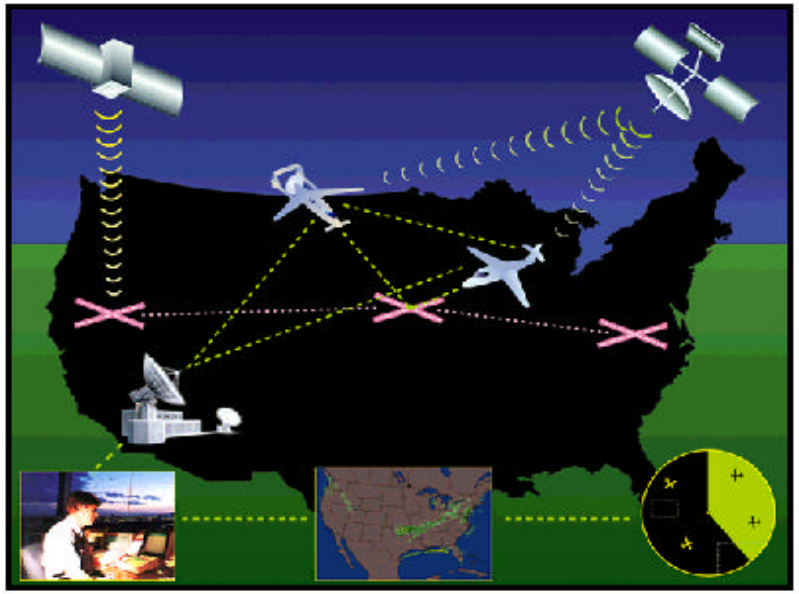




SATS / Airborne Internet

SATS - Smart Air Transportation System

SATS develops and integrates emerging vehicle and infrastructure technologies, and, enables access to the vastly under-utilized infrastructure of smaller non-hub airports and airspace. More efficient access to congested hubs will create unimagined transportation speed for more people to reach more destinations.



Airborne Internet

- Provide a comm architecture that delivers aviation information services in an Internet-like manner where aircraft and ground facilities will be interconnected nodes on a high-speed digital comm network.
- 2022 AI Fundamental Characteristics:
  - Client server analogy
  - Aviation Information System
  - Integrated CNS - Worldwide compatibility
  - Seamless connectivity
  - High user and system capacity

Summary

- **Mobile Router allows for *Networks in Motion*™**
- **Mobile Router is IOS software (RFC 2002 Compliant)**
- **Supports all IOS features**
- **Supports many CISCO Routers**
- **MR (Mobile Router), FA (Foreign Agent), HA (Home Agent)**
- **MR is set and forget**
- **Security association between MR and HA**
- **Preferred path can be set by bandwidth or priority**
- **Dual Hot-Standby**
- **Mobile Router enables internet connections from many types of mobile platforms.**

http://ctd.lerc.nasa.gov/5610/5610.html

Satellite Networks & Architectures Branch
Communications Technology Division
Glenn Research Center
Mail Stop 54-2
21000 Brookpark Road
Cleveland, Ohio 44135-3127
Fax: (216) 433-8705

Programs

- **Welcome**
  - Branch Members
  - Latest News
- **Next-Generation Architectures**
- **Applications**
- **Internet Protocols**
- **ATM**
- **Projects**

Topics of Interest

- Network Research at CSHCN
  - UMd Presentations (Internal Use Only)

Satellite Networks & Architectures Branch

Welcome

The Satellite and Networks Architecture Branch welcomes you. We are a group of diverse professionals knowable in aeronautic and space-based communications. Our expertise encompasses network architecture design and analysis, network and protocol simulation, and protocol research and development.

Please feel free to contact any of the branch members regarding our research. For additional information on our programs, technical products, publications, partnerships, SBIR program, or summer and graduate fellowships, please contact branch secretary who will direct you to the appropriate source.

Vision

Our vision is to be the premier organization for aeronautic and space-based communication network architectures, simulation, and protocol research and development. We will achieve this by developing and obtaining world renowned expertise in aeronautic and space based network design, simulation and protocol research.

The mission of the Satellite Networks and Architectures Branch is to perform advanced research and development of next-generation, aeronautic and space-based information systems to meet future NASA mission communication needs and to enhance the role of satellite communications in the National and Global Information Infrastructure (NII/GII). The Satellite Networks and Architectures Branch carries out its research through partnerships with other government agencies, communication industry and academia. We also fulfill our objectives by carrying out research and development in the following broad categories:

Aeronautic and Space Network Architectures
Applications
Internet Protocols
ATM