



NAT-Satvoice Trial

defined by the
Satellite Voice Task Force (SVTF)
of the NAT IMG

status as of
October 2007

Satvoice for routine ATS communications

Support for the use of SATCOM voice trial was based on:

- the need to gain operational and technical experience with SATCOM voice
- the need to have an alternative means of voice communications in the event of situations such as poor HF propagation
- the need to validate air crew and radio operator procedures
- initial trials for ATS use of SATCOM voice in NAT Region have proved its usefulness in situations such as poor HF propagation

What is tested from the trial?

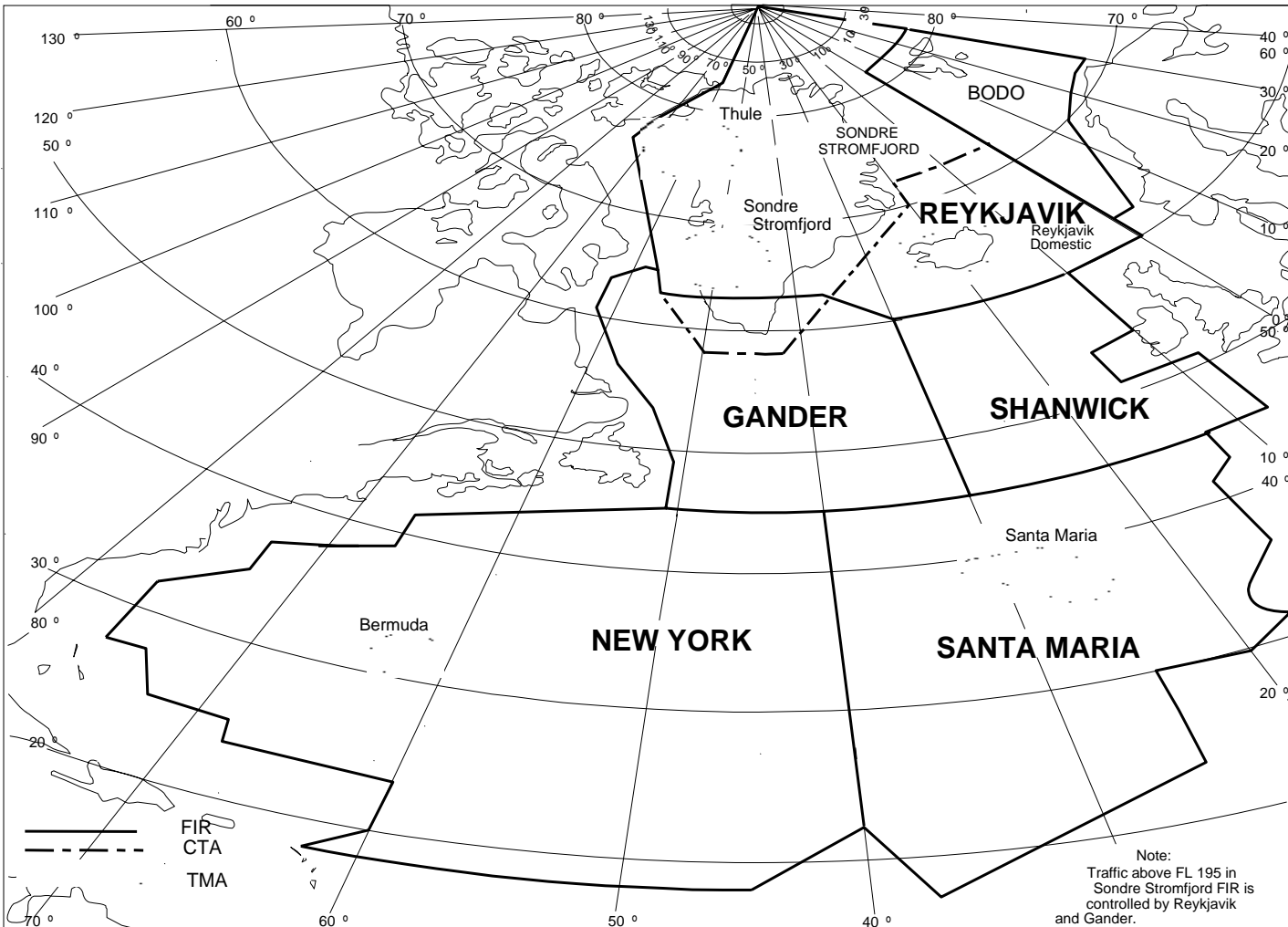
The NAT-Satvoice trial gathered data relating to:

- Security, operational and technical issues
- connection times compared to HF Radio for ground and airborne initiated calls
- validity of ATS and flight crew procedures
- impact on existing ATS and flight crew procedures
- clarity of voice communications
- the effect of the SATCOM shadow
- ATSP ground system performance
- reliability, availability and integrity
- costs associated with use of SATCOM voice

Introduction

- Participant ATSPs: NAVCANADA, IAA, ISAVIA (Iceland), NavPortugal, FAA/ARINC
- Participant airlines: BA, SAS, COA, NWA, FedEx, Air- Europa
- Participant CSPs: SITA & ARINC
- Security Measures and Procedures are:
 1. Application of Personal Identification Number (PIN) and Caller Line Identification (CLI) for g-t-a dialling
 2. Ability to display the priority on the cockpit MCDU
 3. Priority and pre-emption at the GESs
 4. Use of a priority calling scheme
 - Q15 – Emergency calls
 - Q12 – All routine safety (ATS) calls
 - Q10 – AOC calls
 - Q9 – Public priority calls

NAT- Satvoice Trial



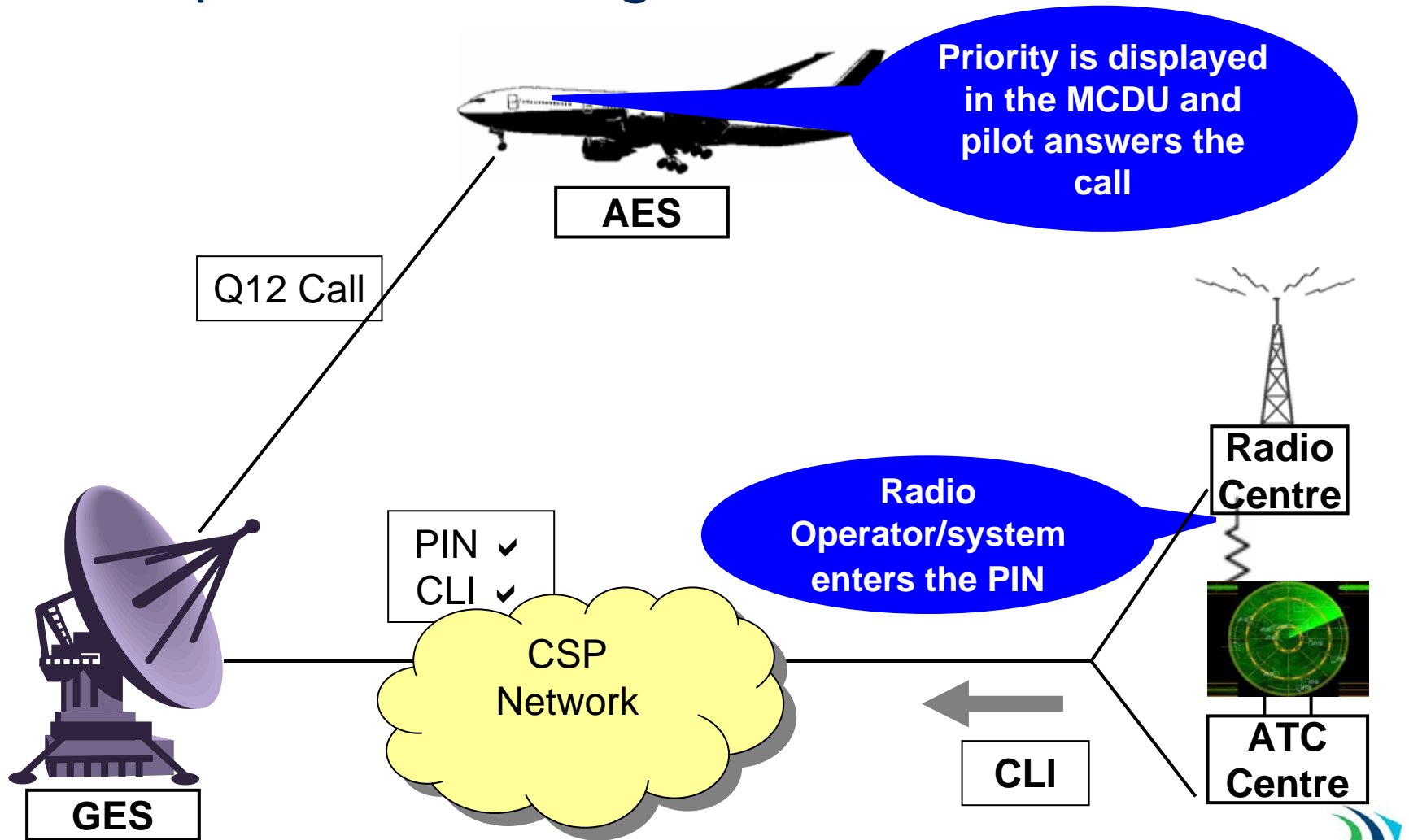
NAT –Satvoice trial ATSPs and FIRs

Satvoice for routine ATS communications

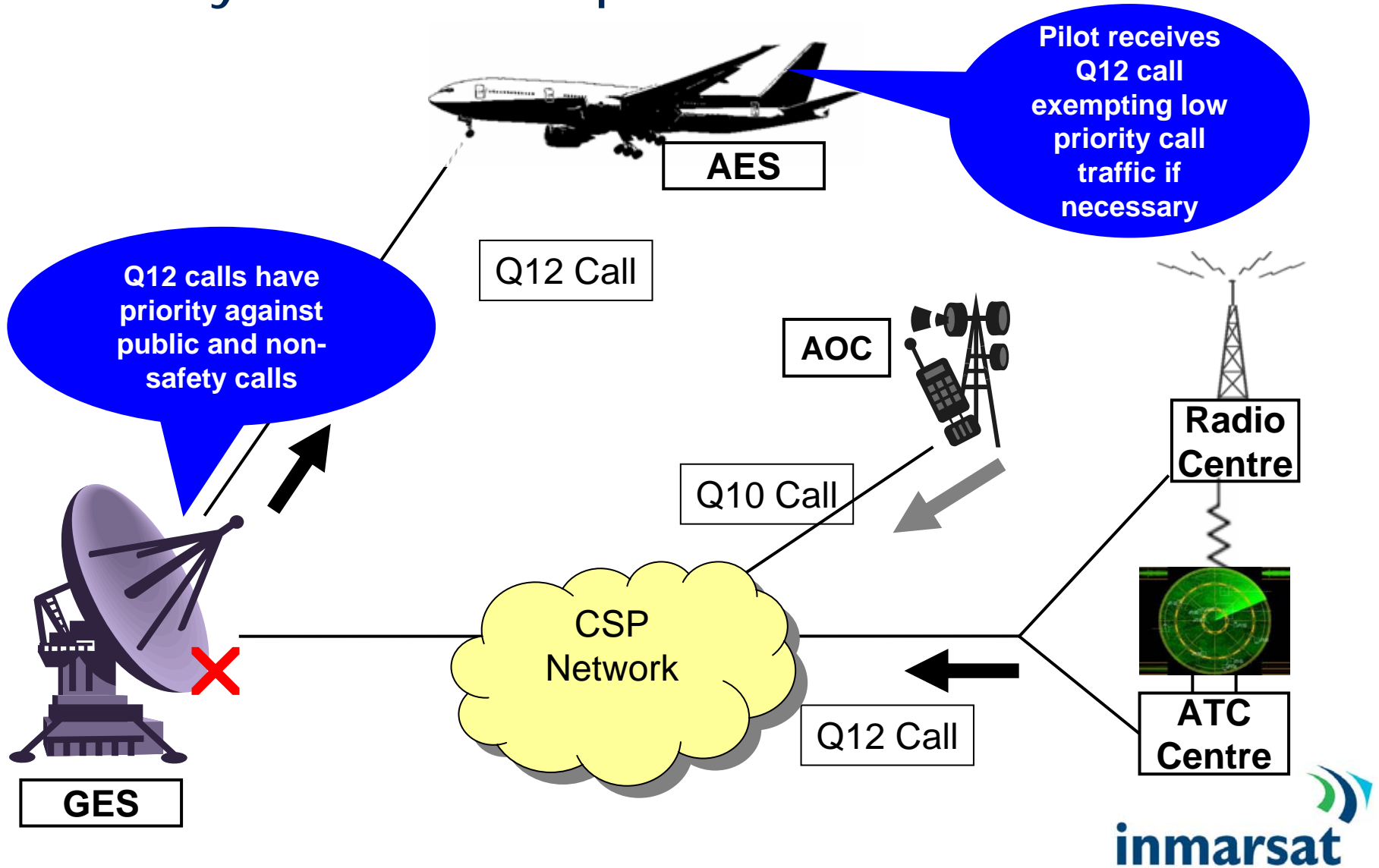
Benefits

- Could provide a solution for the need to have an alternative means of voice communications in the event of situations such as poor HF propagation conditions.
- Has the potential to provide a number of benefits to both airline operators and ATSPs, such as; MEL relief, and alleviation of the need for HF infrastructure enhancement
- NAT ATSPs are evaluating through trials
- Gain operational and technical experience with satellite voice communications

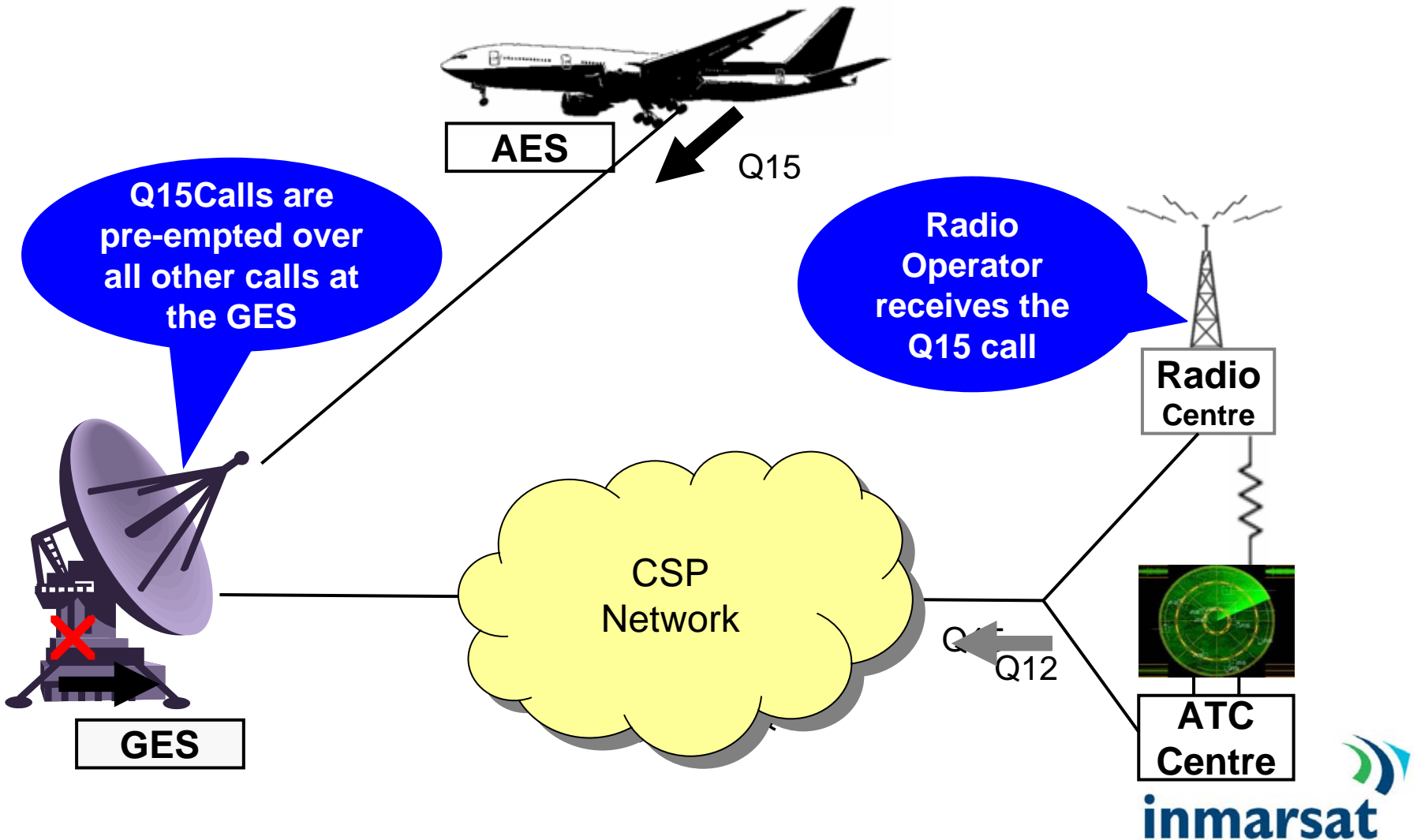
Radio Operator Making a Q12 Call



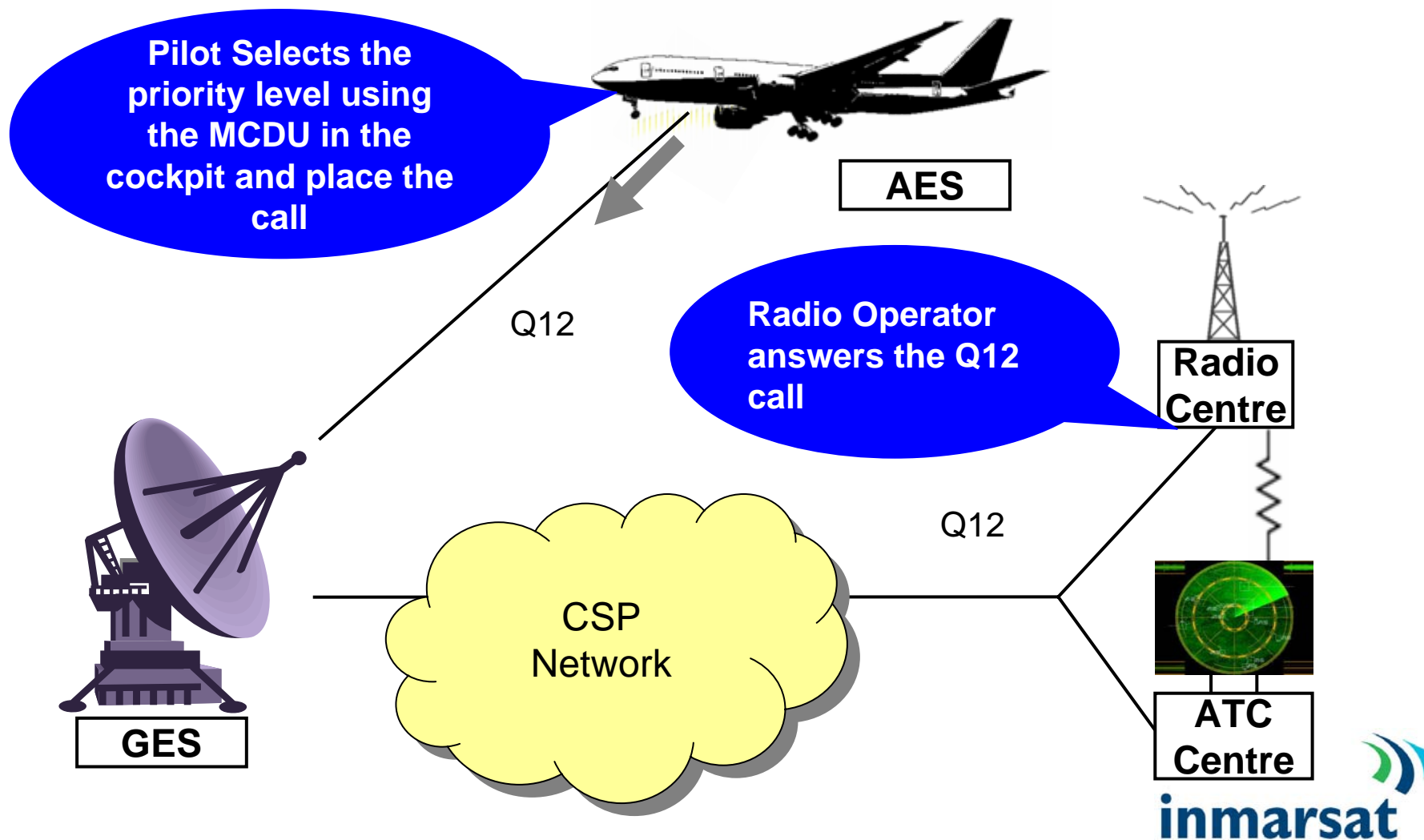
Priority and Pre-emption at the GESs



Air to Ground Q15 Calls



Air to Ground Q12 Call



Satvoice for routine ATS communications

- The application of a priority calling scheme
 - Incoming Call



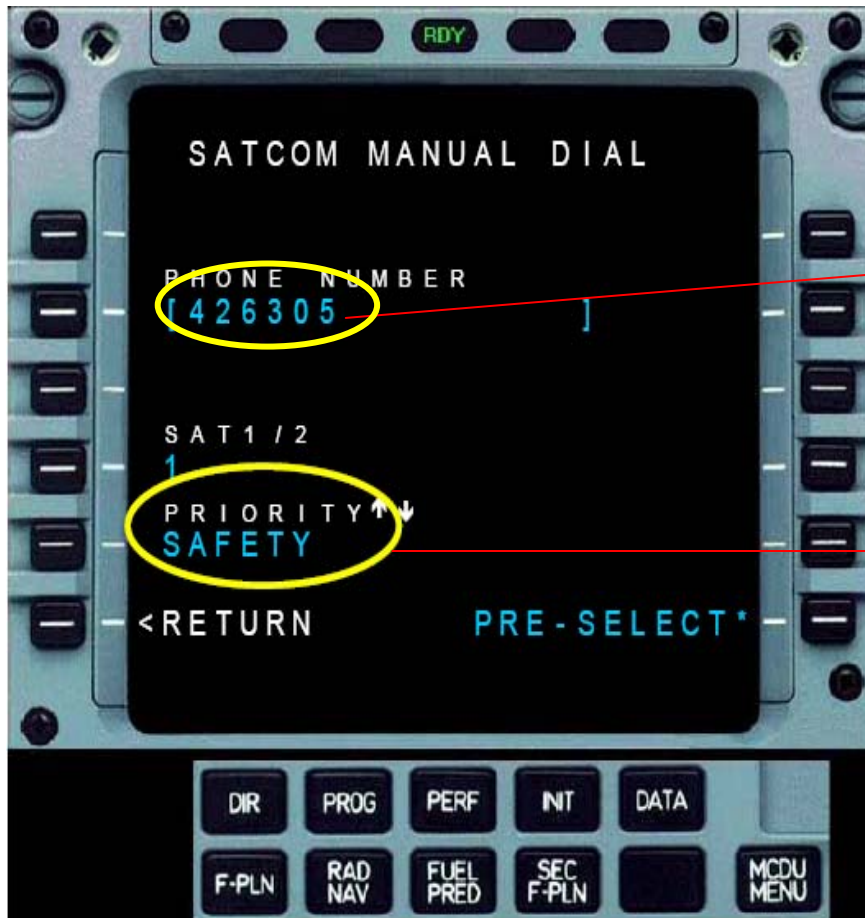
Priority Level is displayed in the cockpit for incoming calls

MCDU Displays the call was initiated from the ground

Boeing MCDU

Satvoice for routine ATS communications

- The application of a priority calling scheme
 - Placing a Call



Inmarsat
short code

Priority is set
as
"safety"(Q12)

Airbus MCDU

Trial Outline Specification

- Began 1st May
- ATSP agreed maximum participation 15 aircraft in each direction daily
- Both Boeing and Airbus aircraft types included
- Satvoice-only a/c are prime candidates
- GM specifies that participating FANS a/c should not log-on for datalink operations
- Suitability of satcom voice is tested for all message types
- Conducted over a 2-3 months (max) period



SVTF Trail Preparation

- Guidance Material produced
 - type specific guidance for Boeing and Airbus included as appendices
- Ground systems and service provider networks modified to meet enhanced security requirements
- Short code system rejuvenated
- Limited number of airlines participated (mostly northerly routes)
- Trial end date extended on limited basis for airlines started at a later phase of the trial in order to build the trials data-base.

SVTF Current Status

- Trial ended at the end of August 07
- Feed back received from flight crew/airlines
- Radio operator trial logs produced
- Results being analysed
- Operational / technical issues being addressed and investigated
- Draft final report produced and forward steps discussed at the 4th SVTF meeting in September 07 – report finalised Oct 07
- Report to ICAO NAT IMG (IATA and airlines)

Trial Overview

- A total of 2912 SATCOM calls were recorded between May 1, 2007 and Aug 31 2007 consisting of 2589 air-to-ground and 323 ground-to-air calls
- 98.57% of air-to-grounds calls were successful (readability 4 & 5 out of 5)
- 96.29% of ground-to-air calls were successful (readability 4 and 5 out of 5)
- Guidance Material was proven to be sufficiently robust
- Average g-to-air connection time was increased due to additional security measures (av. connection time 41.3 seconds)
- The implemented security measures and the use of priority levels were proven to enhance security
- [Satcom received as far as 84° north i.e. beyond 80°N (0° elevation)]

Thank you

