



Satellite Operator Panel

Interference Mitigation

2nd November 2010 - Tunis.

Satellite Operators Interference Initiative - Summary

- Current environment creates greater opportunity for RFI
 - More uplinks (industry growth, cheaper equipment)
 - Increased uplink power for small terminals
 - Two degree spacing of satellites and higher utilisation
 - De-regulation: new operators with no easy access to training
 - Increased network complexity: installation/operation challenges
- Operator error, including poor maintenance, remains one of the most significant causes of RFI (per SUIRG and Industry records)

The Satellite Operator Interference Initiative:

- Operators needed to take a greater role in tackling RFI
- Prompted initial discussions between SES and Intelsat and subsequent involvement from other Satellite Operators

Satellite Operators Interference Initiative Summary

- Formal kick-off in March at Satellite 2009
- Currently 18 Operators involved
 - AMOS, Arabsat, Asiasat, Eutelsat, Gazprom, Hispamar, Hispasat, Inmarsat, Intelsat, JSAT, SAT-GE, SatMex, SES, StarOne, Telenor, Telesat, Measat, Nilesat



Nilesat


SAT-GE

INTELSAT.
Closer, by far

 عرب سات
ARABSAT
 Our world. Your world.

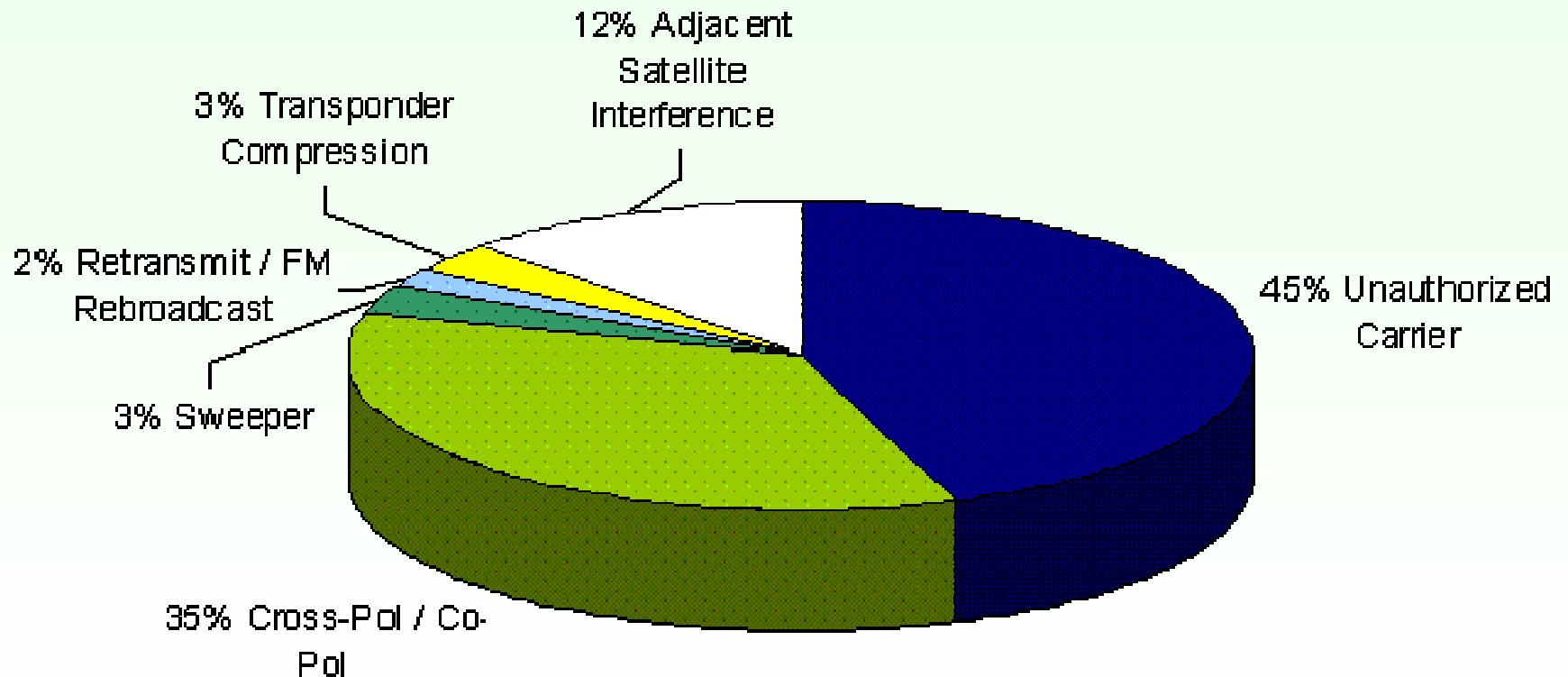
MEASAT


Satellite Operators Interference Initiative

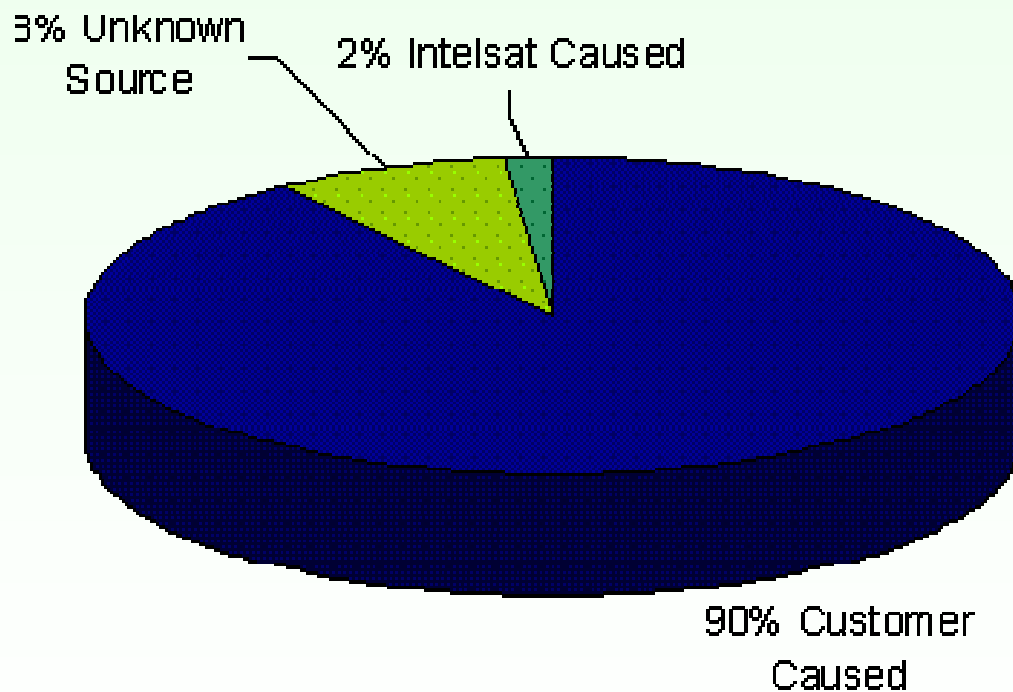
Initiatives

- **Training and Certification for uplinkers and installers**
- **Endorsement and development of 'Carrier ID'**
- **Formalized Data Sharing between the Satellite Operators**

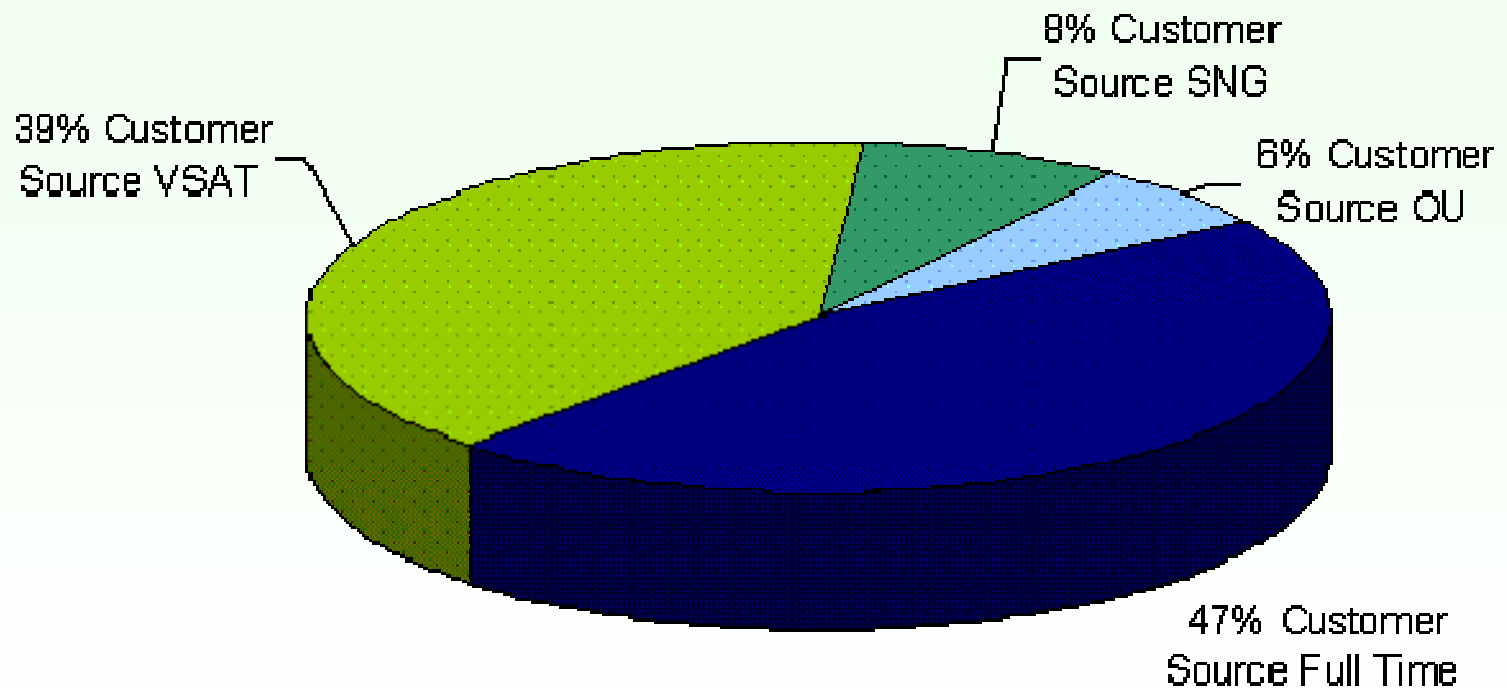
Interference Types (March - August 2010)



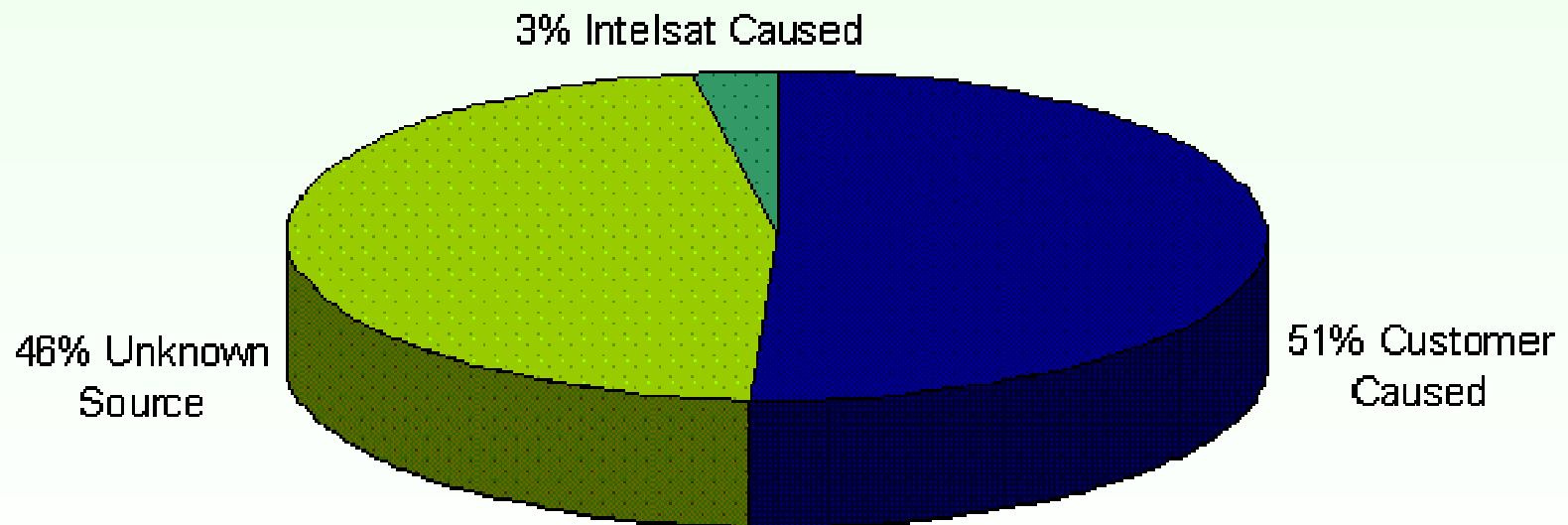
Copol / Xpol (March - August 2010)



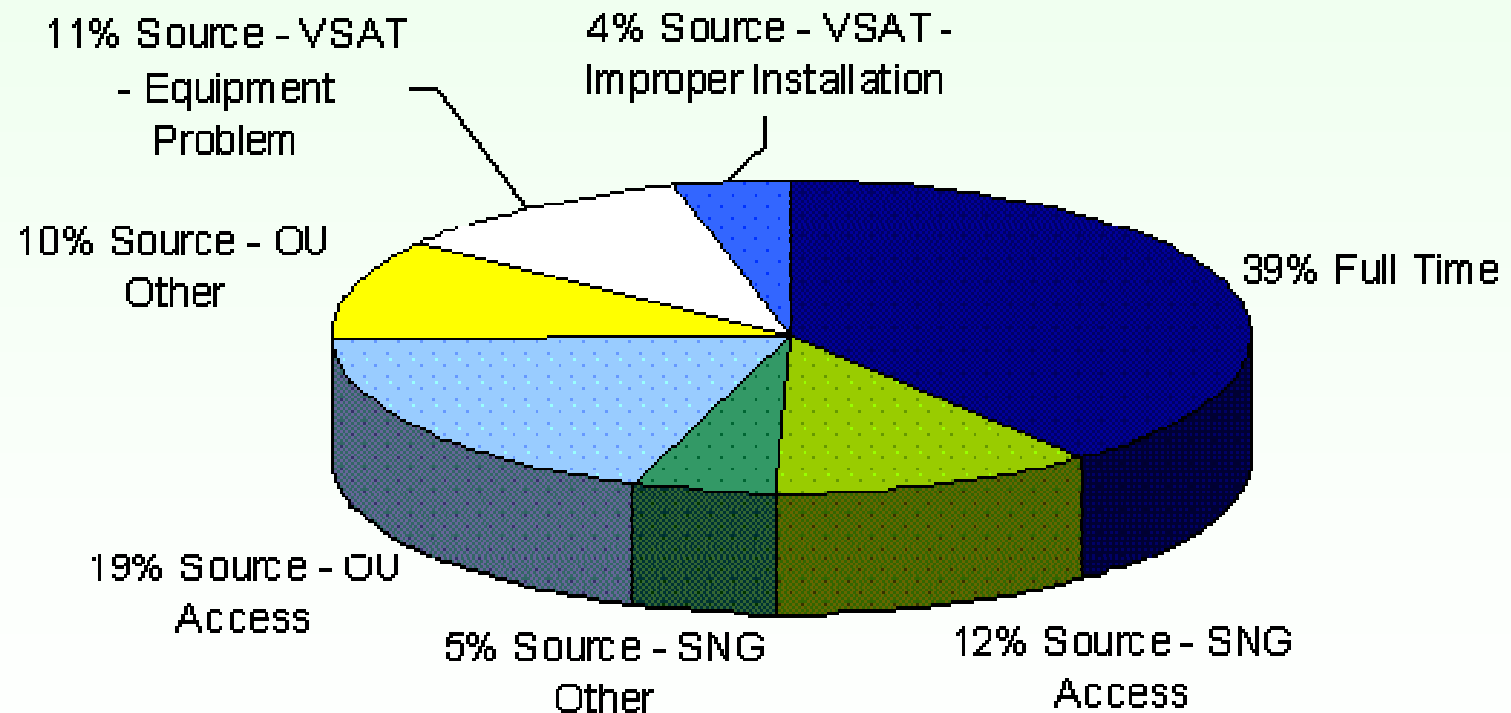
Customer Caused Copol / Xpol (March - August 2010)



Unauthorized Carrier (March - August 2010)



Customer Caused Unauthorized Carrier (March - August 2010)



Satellite Operators Interference Initiative

Accomplishments

- Satellite Operators Contact List
- RFI Alert
- Agreed to and ongoing initiatives
- Rallying of the Industry
- Achieved initial operations of the Space Data Center (Conjunction Assessment functions) and Operators are being encouraged to join. The SDC will eventually consolidate the Operator Contacts and RFI Alerts.

Training and Certification Initiative

Requirements

- Operators are finalizing a training requirements document

Roll Out

- Many operators agree to the principle of using only certified installers/operators access
- We need sufficiently trained installers, certification criteria, and general agreement before this could be endorsed
- Timeline discussions in Operator Working Group

The RFI Alert Network

- The Satellite Operator RFI Alert System was established to assist satellite operators in combating RFI and to notify one another when qualifying RFI is present
- The RFI Alert is a broadcast email system that alerts satellite operators that an RFI is impacting multiple operators or the re-appearance of such RFI
- Benefits of the Satellite Operator RFI Alert System
 - Ability to access the RFI Alert broadcast email group
 - Real-time notification of RFI that affects satellite operators
 - Facilitates cooperation to resolve RFI

The RFI Alert Network

- **Current participants;**
 - **Asiasat, Hispamar, Hispasat, Inmarsat, Intelsat, Sat-GE, SatMex, SES, JSAT, StarOne, Telenor, Telesat**

Satellite Operators Interference Initiative

- **An industry wide initiative**
- **A global Operator led project**
- **Working with customers to mitigate interference issues**