

**Comments on Intelsat's
plan to repoint
transponder on IS 707 or
to switch to another
satellite**

Repointing of the US and EUR Transponder

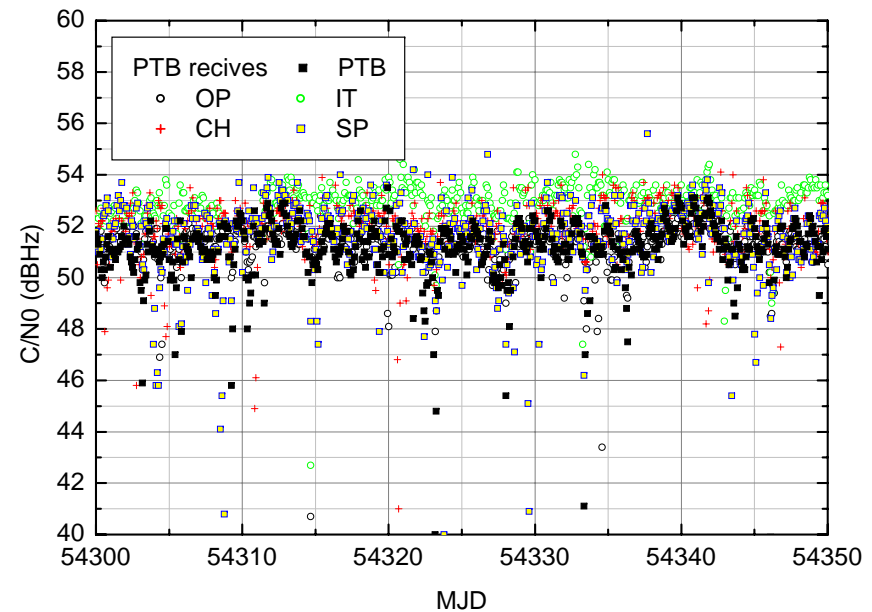
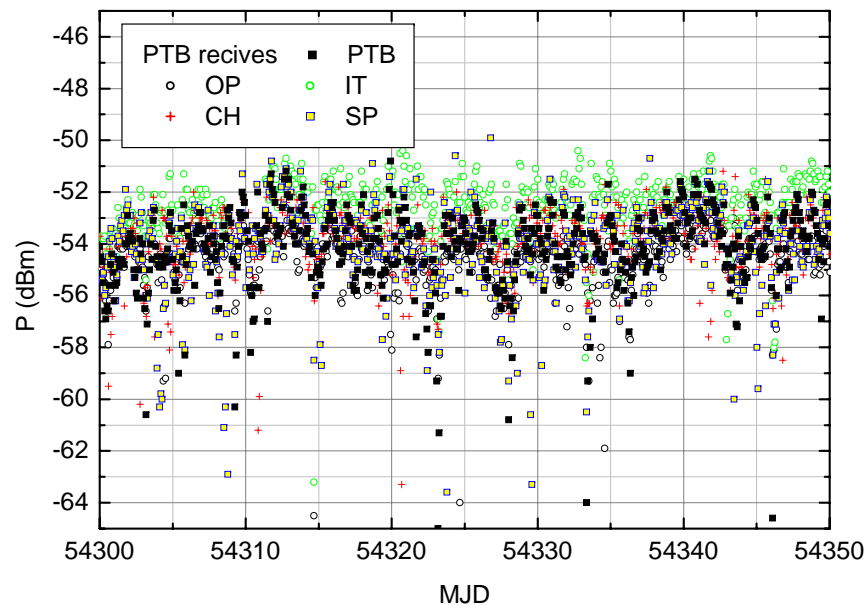
A repointing of the of the transponder would cause

EUR-EUR: 6-7 dB less Rx-power

USA-EUR: 7 dB less Rx-power

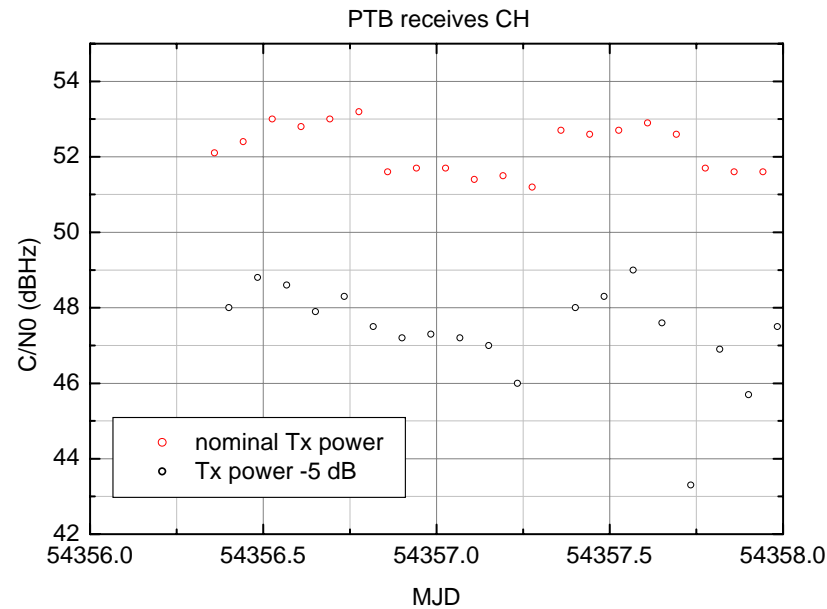
EUR-USA: 5 dB less Rx-power

Present receive parameter at PTB:

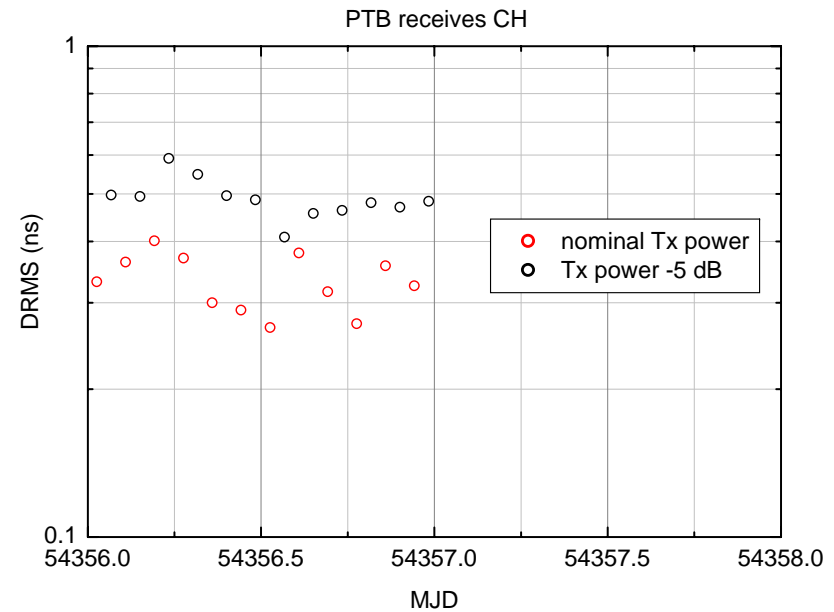


Repointing of the US and EUR Transponder

Test: Reduction of Tx-power (-5 dB) between CH and PTB:



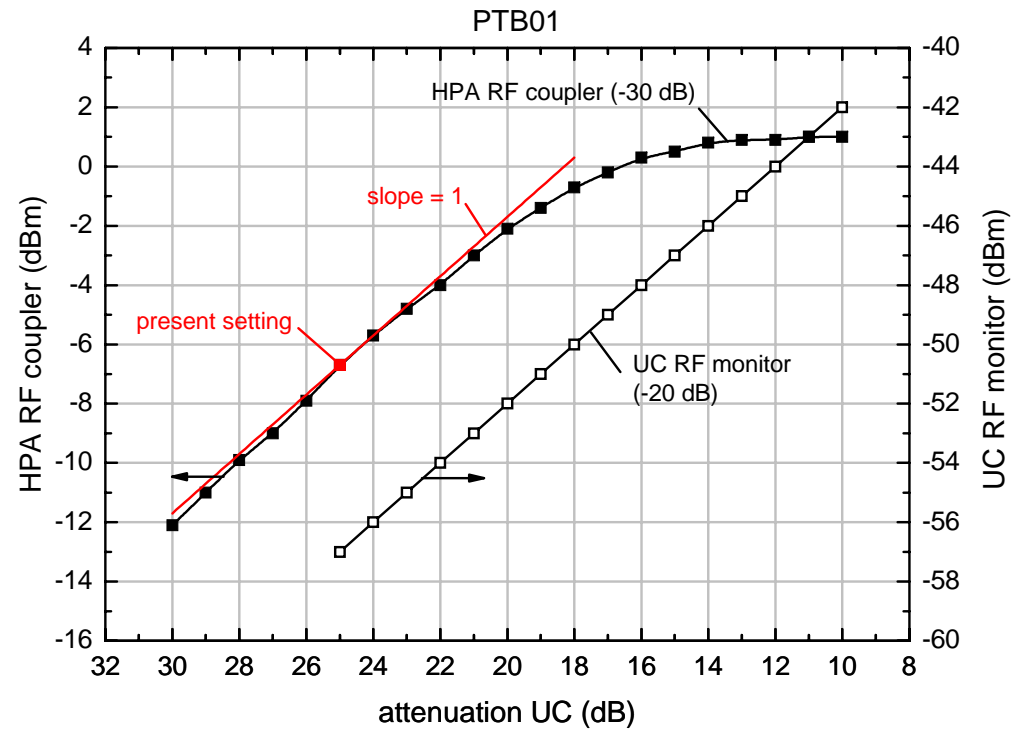
C/N₀ < 50 dBHz



DRMS increased

Repointing of the US and EUR Transponder

PTB's HPA output power saturates when Tx-power is increased while the UC RF monitor remains linear.



Repointing of the US and EUR Transponder

A repointing of the of the transponder would require

EUR-EUR: 6-7 dB more Tx-power

USA-EUR: 7 dB more Tx-power

EUR-USA: 5 dB more Tx-power

How much can the Tx-power be increased?

USA: 1 +3 dB

1 +6 dB

EUR: 4 +0 dB

2 +3 dB

3 +6 dB

2 +9 dB

A repointing of the transponders used on IS 707 would require hardware (HPA) changes at 7 participating stations.

Alternative: Satellite change

Intelsat proposes a two step change:

1st to	IS-3R	November 2007
2nd to	TS-11N	End of 2008

IS-3R is an „old“ satellite

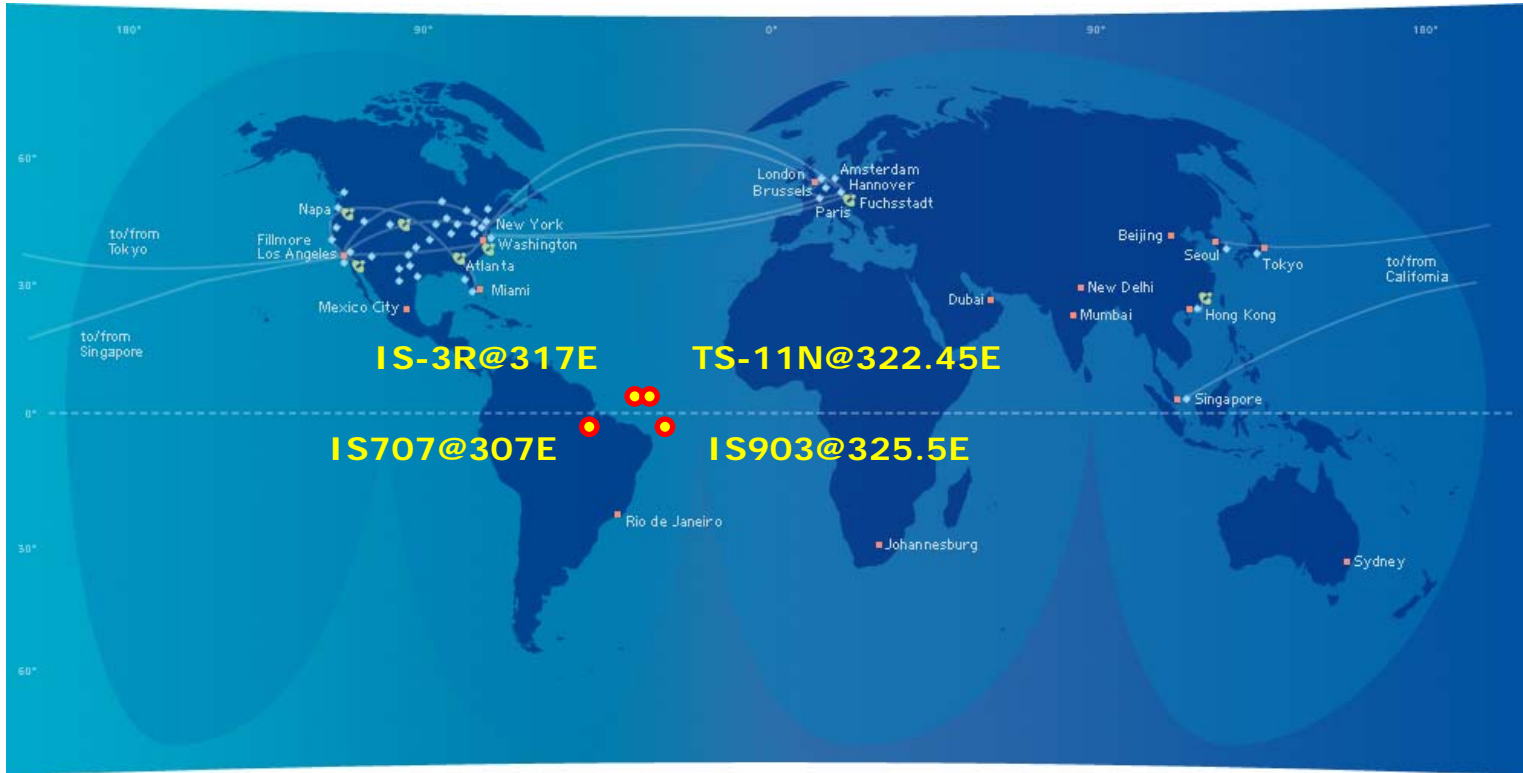
TS-11N will be launched in early 2008

Transponder configurations will be the same at least on IS-3R.

Frequencies have not been assigned, yet.

No Information about the transponder delay stability are available.

Locations of the GEOs



IS707

307E

IS-3R

317E

TS-11N

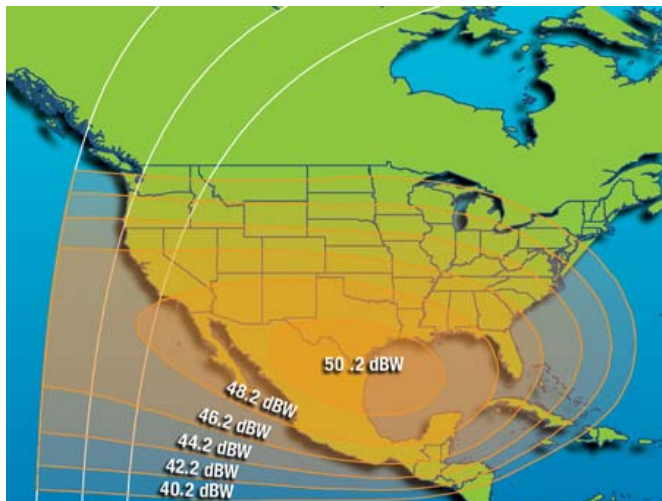
322.45E

IS903

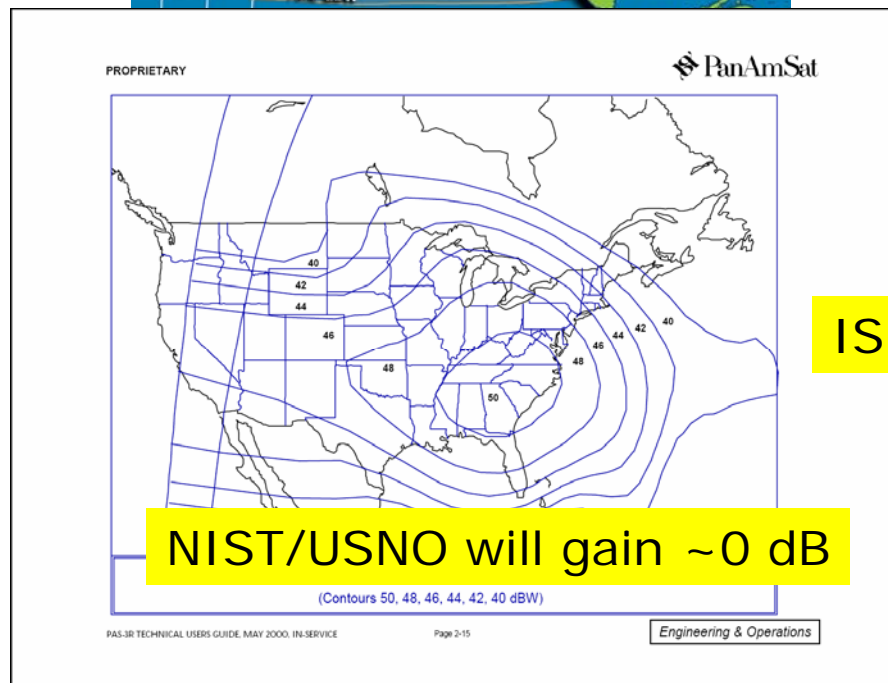
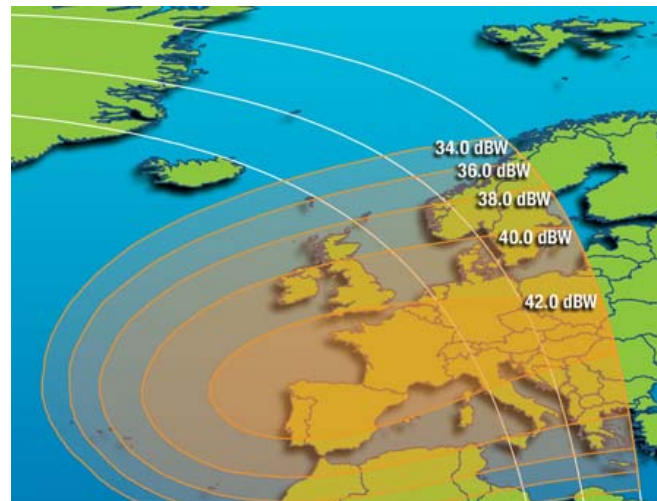
325.5E

(used ~2004)

Coverage Maps

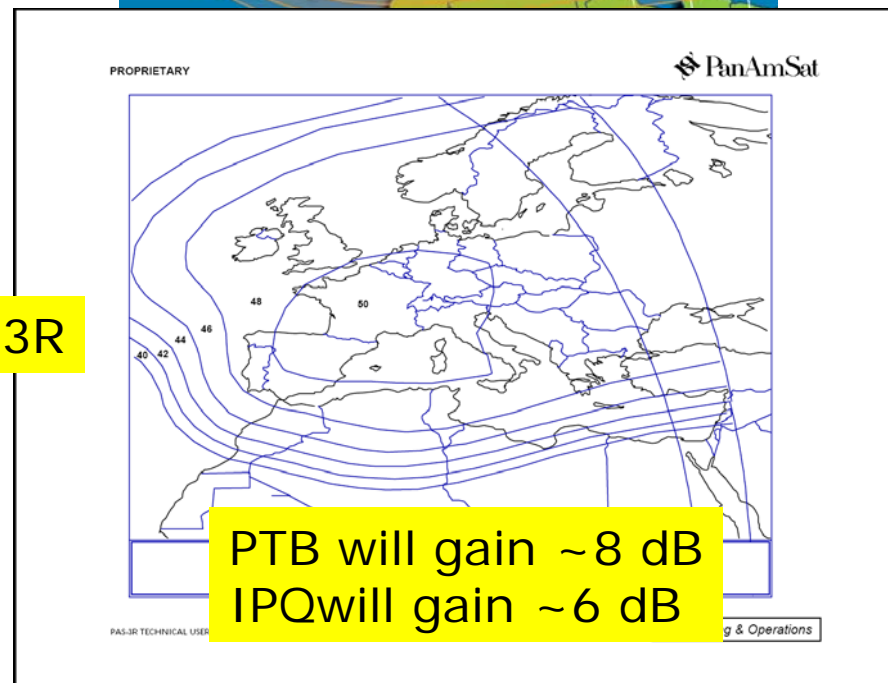


IS707



IS-3R

NIST/USNO will gain ~0 dB



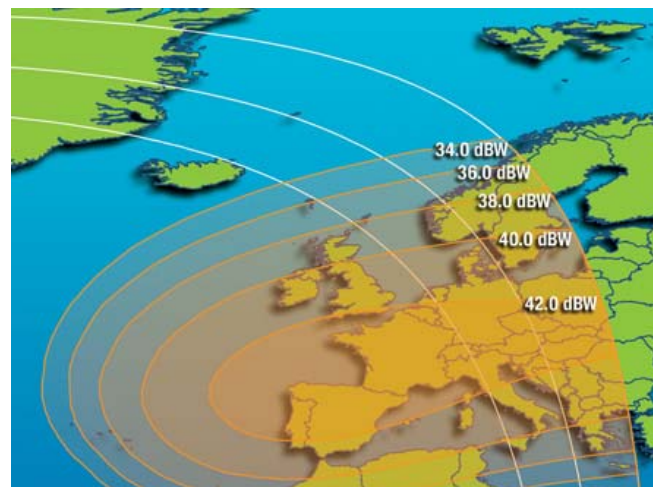
PTB will gain ~8 dB
IPQ will gain ~6 dB

Coverage Maps

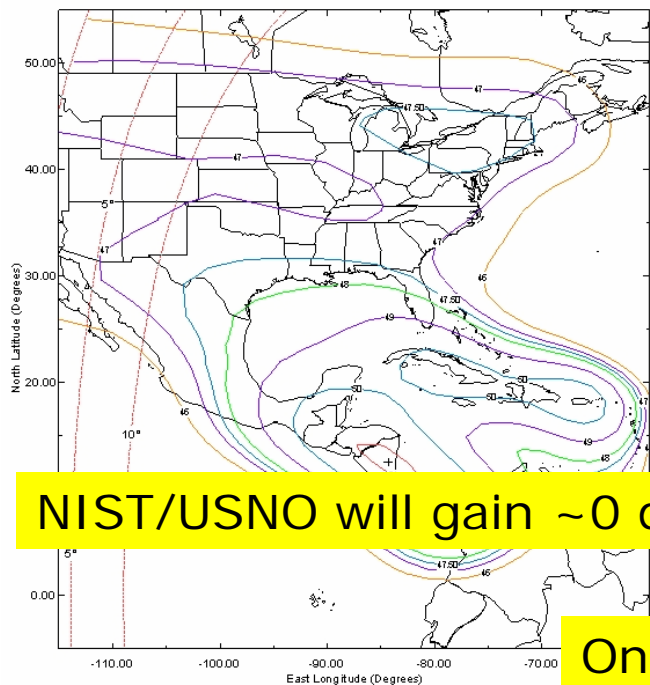


T11N USA
EIRP CONTOURS (dBW) @ 37.55 deg West

IS707

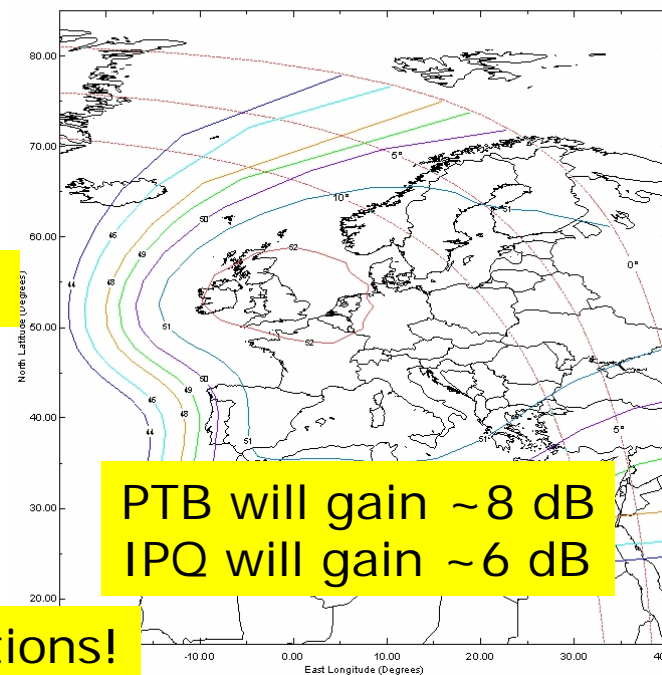


T11N Europe
EIRP CONTOURS (dBW) @ 37.55 deg West



NIST/USNO will gain ~0 dB

TS-11N



PTB will gain ~8 dB
IPQ will gain ~6 dB

Only estimations!

Open Questions

Available Frequencies?

List of possible frequency ranges from the participating stations

Calibration?

IS is willing to financially support our efforts for a recalibration of the links. IS requires a cost estimation.

Coordination with Galileo IOV phase?

Any satellite change should not be carried out during IOV phase.

Open questions:

When will TS-11N be launched?

When will IOV start?