



## ■ SIRAL2 en orbite

26 juin 2012

Corporate Communications

**THALES**

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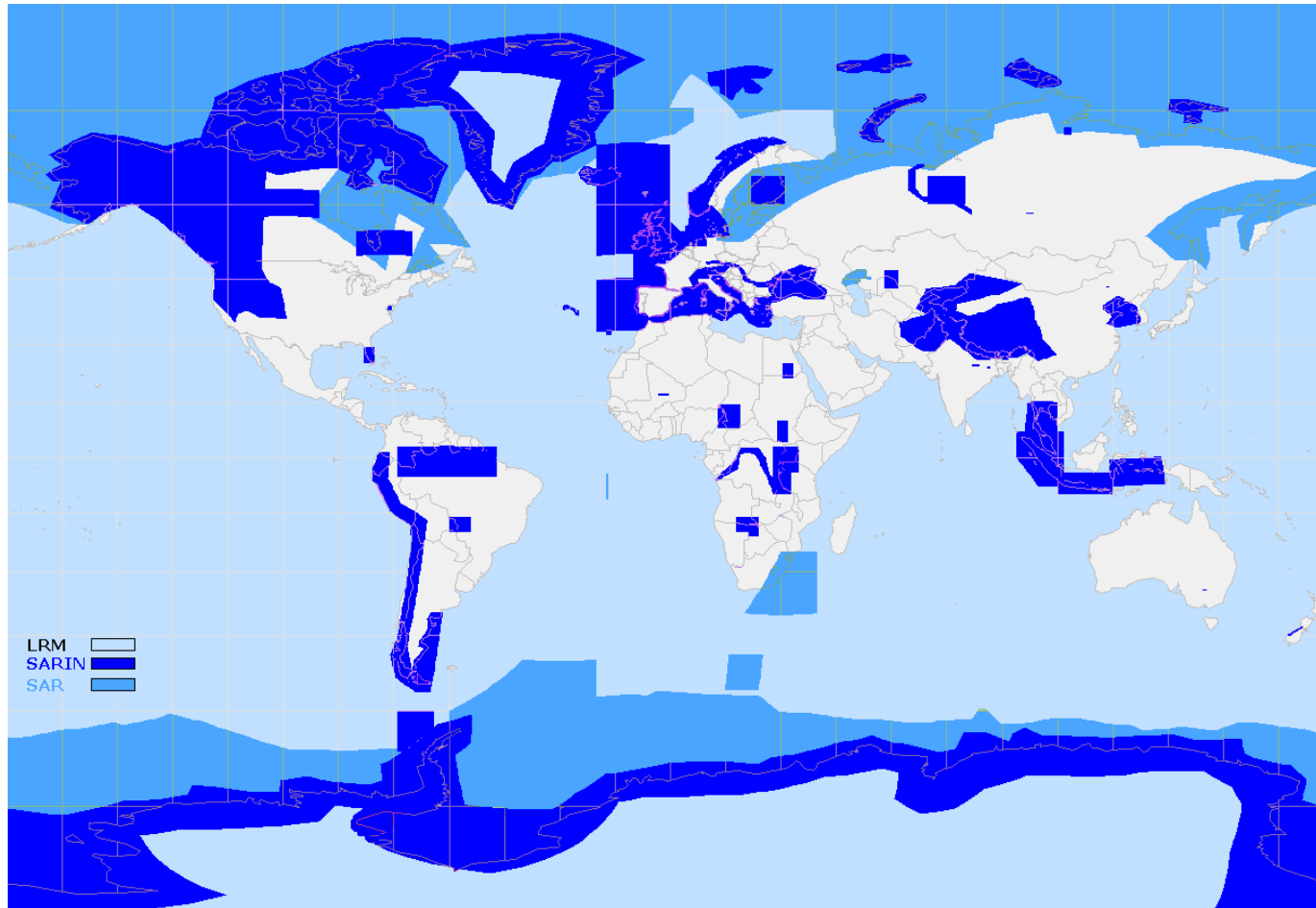
## EVOLUTIONS RECENTES

### PERFORMANCE EN VOL

- MODES UTILISES
- GAIN/DELAIS/RESOLUTION
- PHASE INTERFEROMETRIQUE PHASE

## CONCLUSION

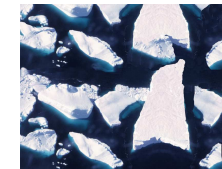
# MASQUE DES MODES NOMINAL



1. *The Low Resolution for sea and in Land ice sheets*

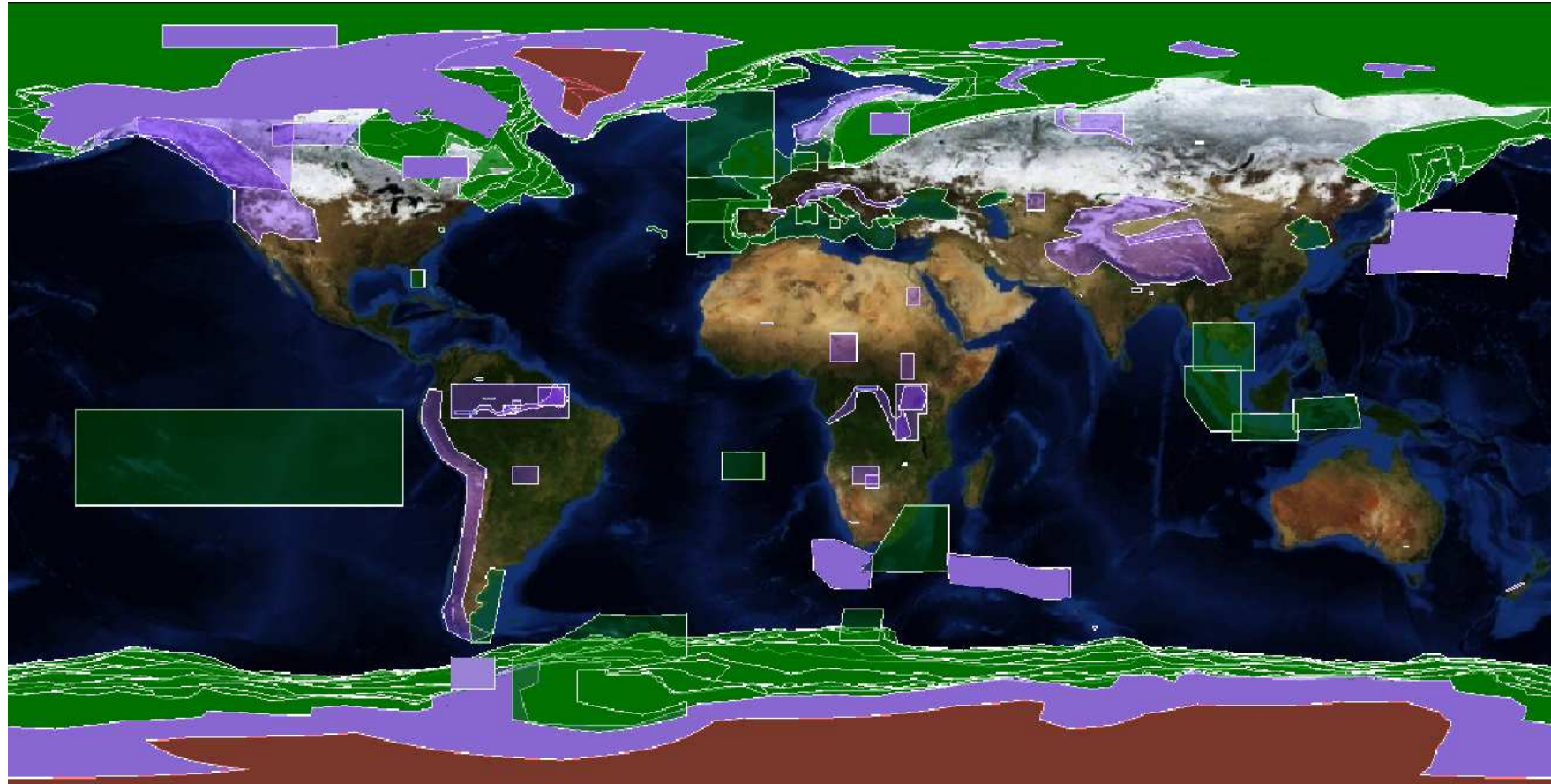


2. *High resolution for sea ice*



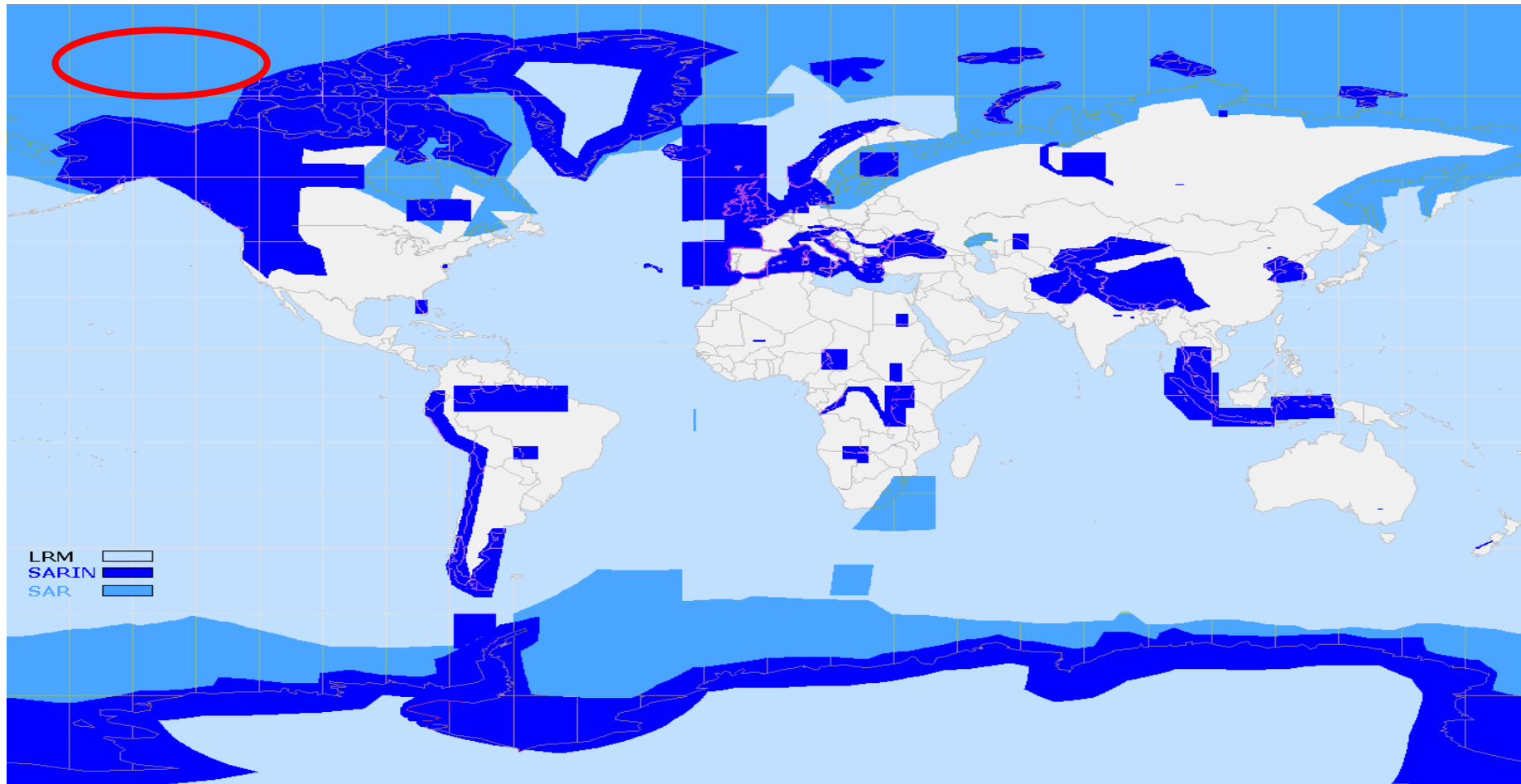
3. *The interferometric of ice sheets margin*







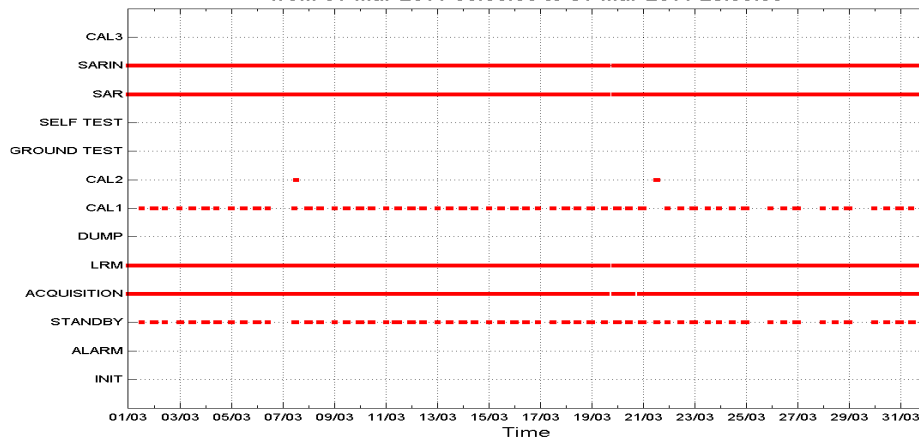
# EVOLUTIONS POUR LES GLACES



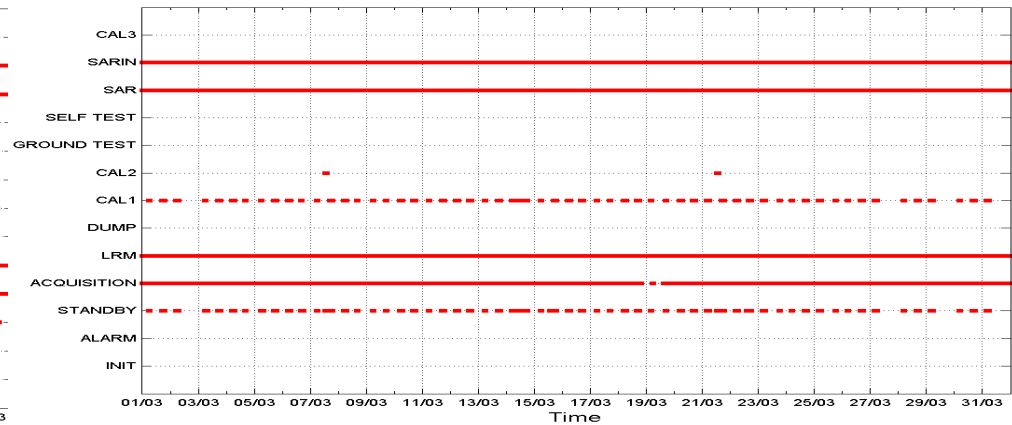


## COMPARAISON SUR 12 MOIS

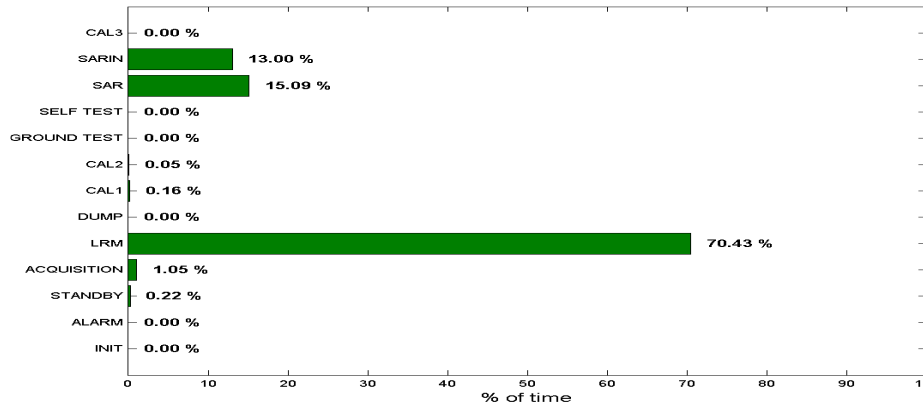
SIRAL2 - OPERATING MODE (SST00000)  
from 01-Mar-2011 00:00:00 to 31-Mar-2011 23:59:59



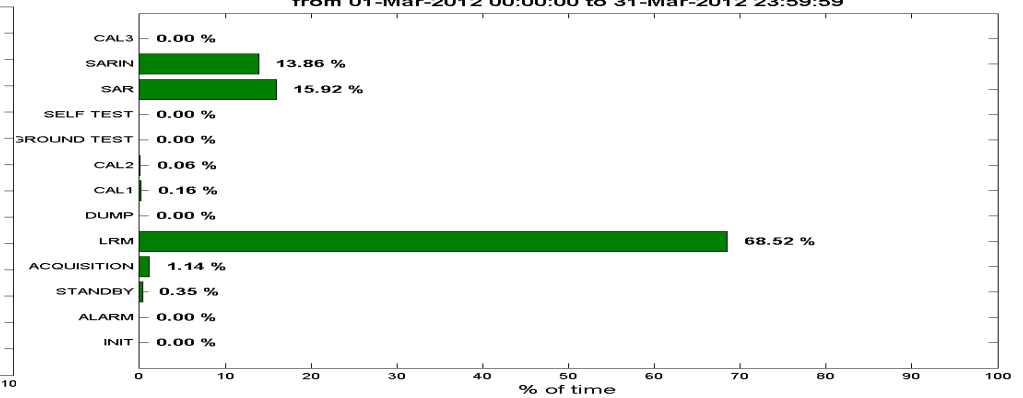
SIRAL2 - OPERATING MODE (SST00000)  
from 01-Mar-2012 00:00:00 to 31-Mar-2012 23:59:59

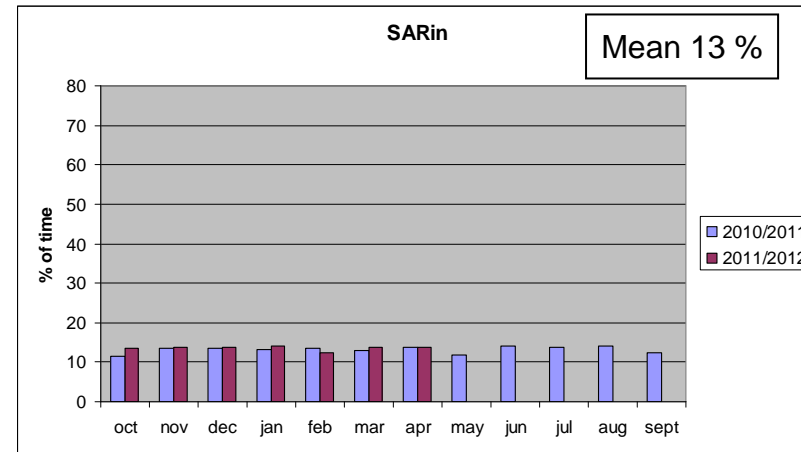
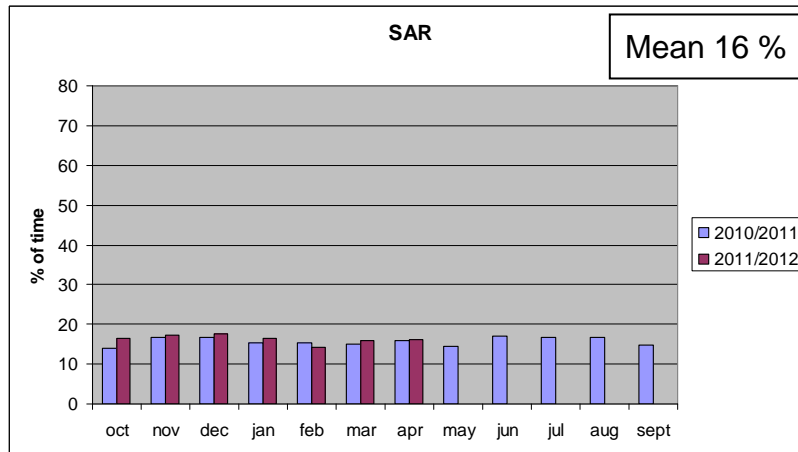
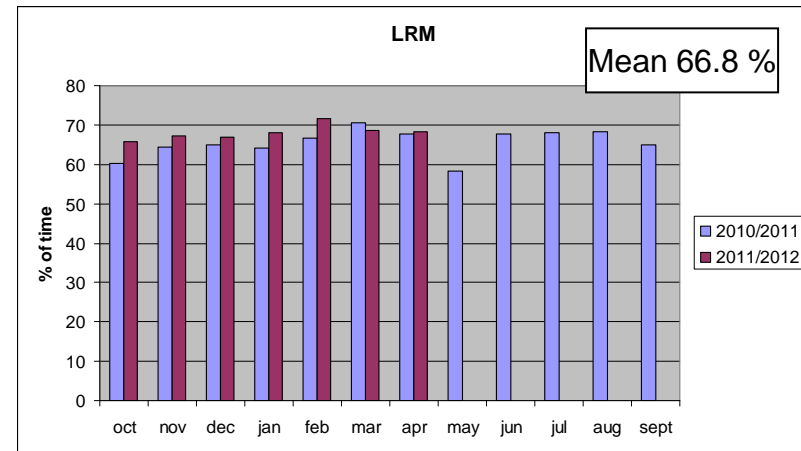
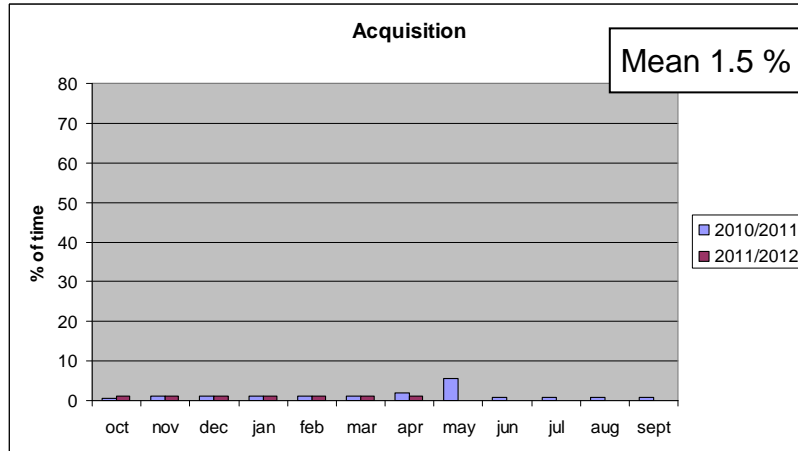


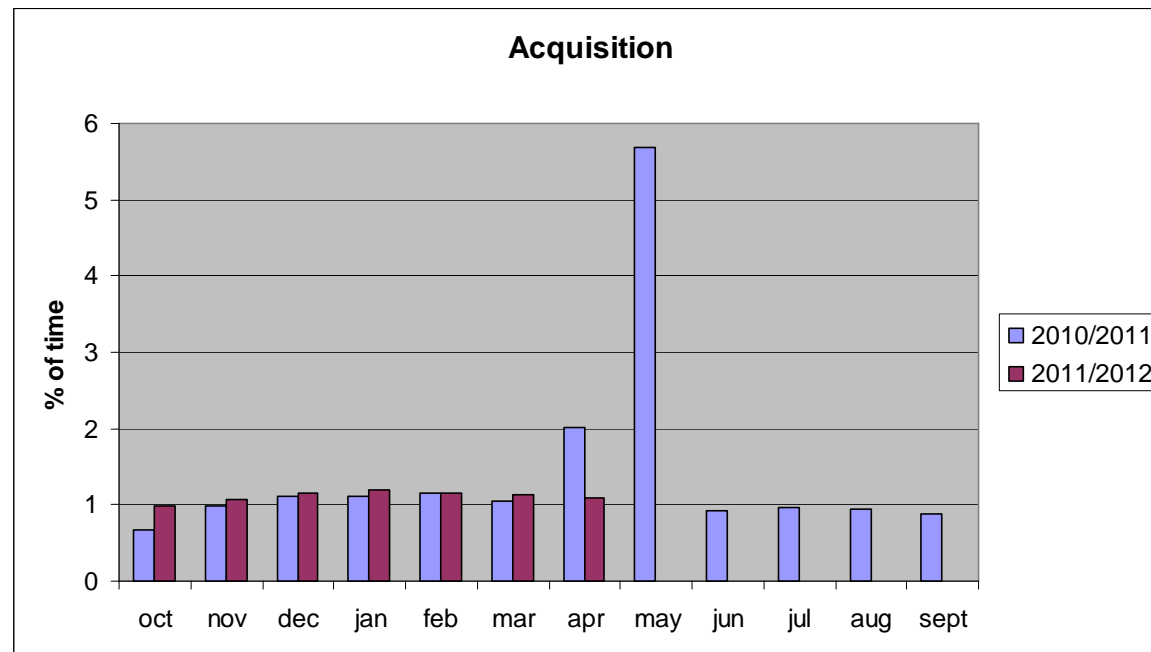
SIRAL2 - OPERATING MODE (SST00000) : percentage of time  
from 01-Mar-2011 00:00:00 to 31-Mar-2011 23:59:59



SIRAL2 - OPERATING MODE (SST00000) : percentage of time  
from 01-Mar-2012 00:00:00 to 31-Mar-2012 23:59:59



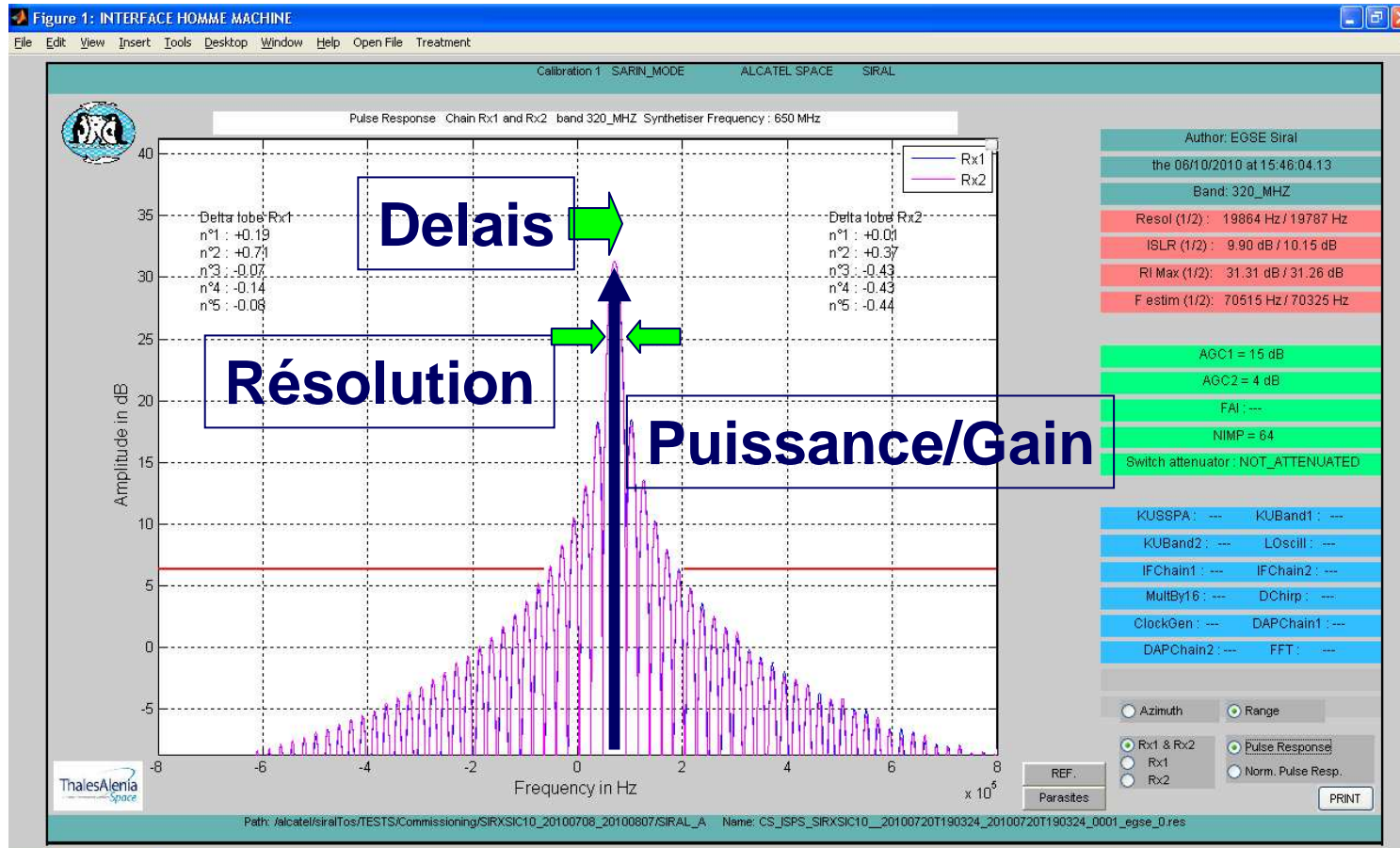




## STATISTIQUE D'ACQUISITION

- De Décembre à Février => durée plus importante
- De Juin à août => durée la plus faible
- Effets liés à la couverture de glace ? Effets des saisons ?

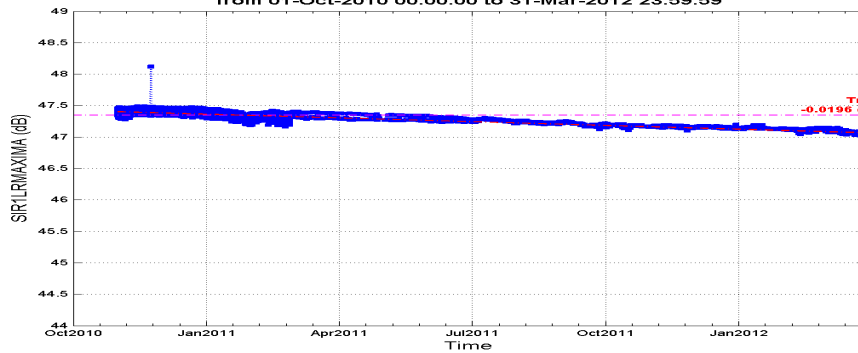






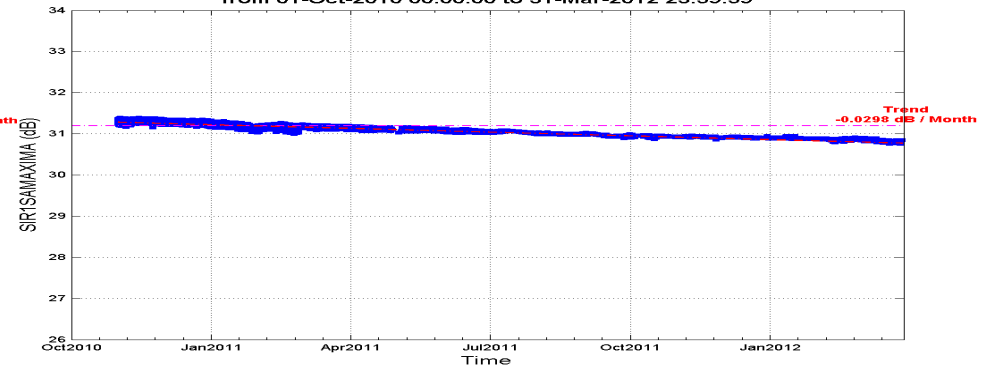
**LRM**

SIRAL2 - CAL1 LRM SIR-A Rx1 : RIR maximum value (SIR1LRMAXIMA)  
(Mean = 47.34 dB - Standard deviation = 0.08 dB - Trend = -0.0196 dB / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



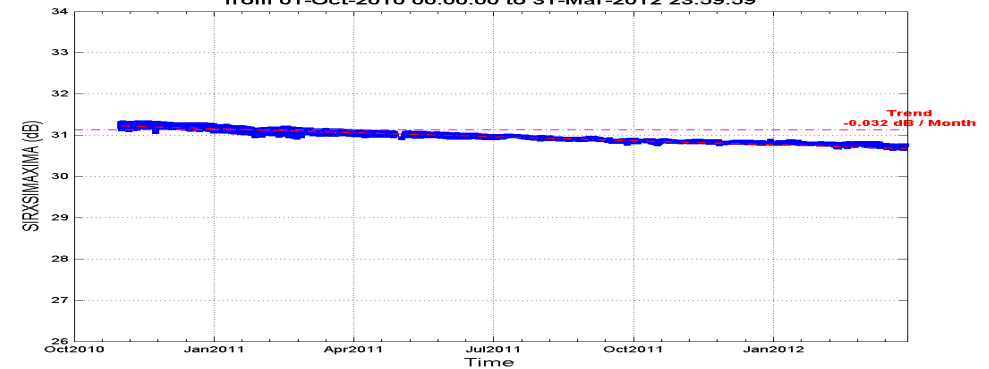
**SAR**

SIRAL2 - CAL1 SAR SIR-A Rx1 : RIR maximum value (SIR1SAMAXIMA)  
(Mean = 31.19 dB - Standard deviation = 0.11 dB - Trend = -0.0298 dB / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



**SARin**

SIRAL2 - CAL1 SARIN SIR-A Rx1 : RIR maximum value (SIRXSIMAXIMA)  
(Mean = 31.13 dB - Standard deviation = 0.11 dB - Trend = -0.032 dB / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



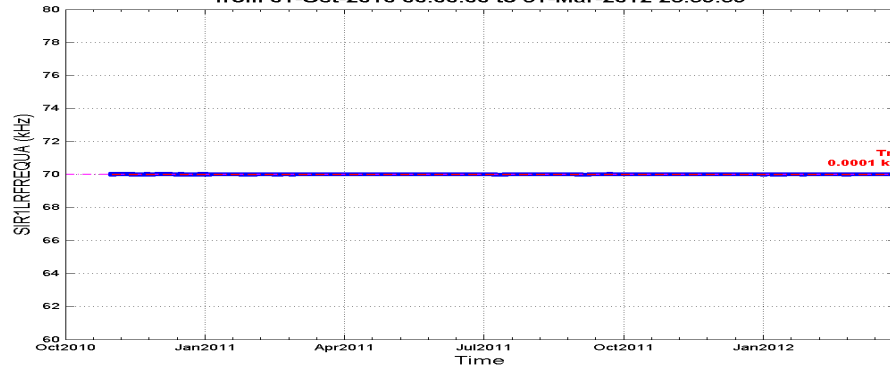
## Evolution de la puissance à bord

- Puissance/gain
  - -0.3 dB evolution
  - <0.03 dB/mois



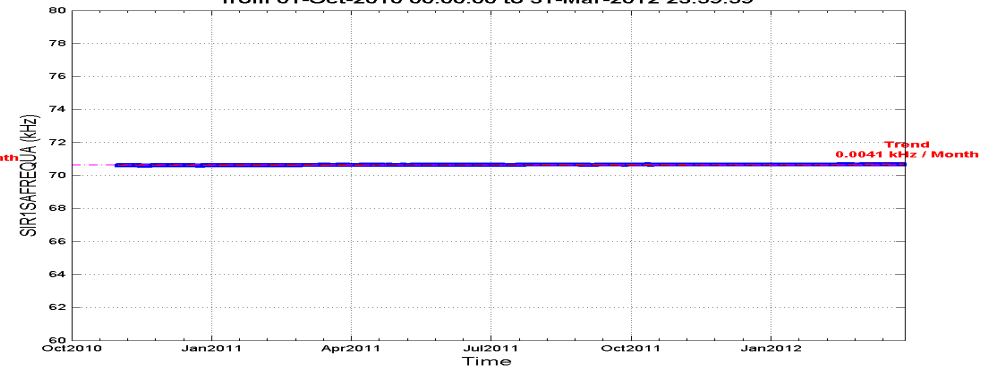
## LRM

SIRAL2 - CAL1 LRM SIR-A Rx1 : RIR maximum position (SIR1LRFREQUA)  
(Mean = 69.99 kHz - Standard deviation = 0.01 kHz - Trend = 0.0001 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



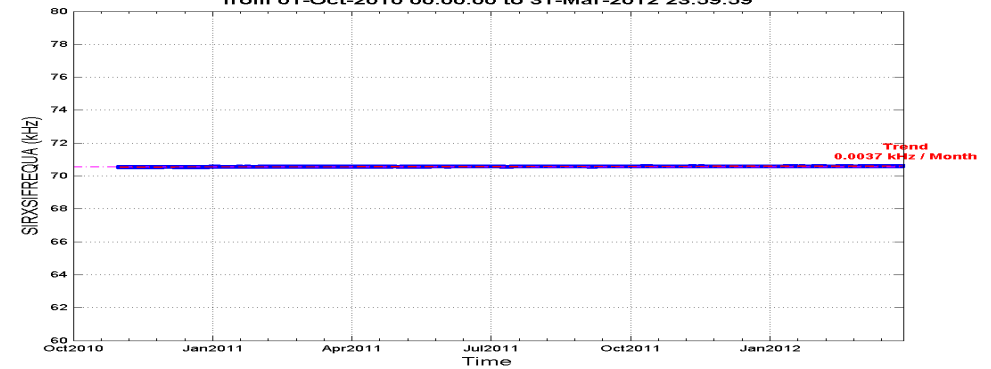
## SAR

SIRAL2 - CAL1 SAR SIR-A Rx1 : RIR maximum position (SIR1SAFREQUA)  
(Mean = 70.62 kHz - Standard deviation = 0.02 kHz - Trend = 0.0041 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



## SARin

SIRAL2 - CAL1 SARin SIR-A Rx1 : RIR maximum position (SIRXSIFREQUA)  
(Mean = 70.55 kHz - Standard deviation = 0.02 kHz - Trend = 0.0037 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



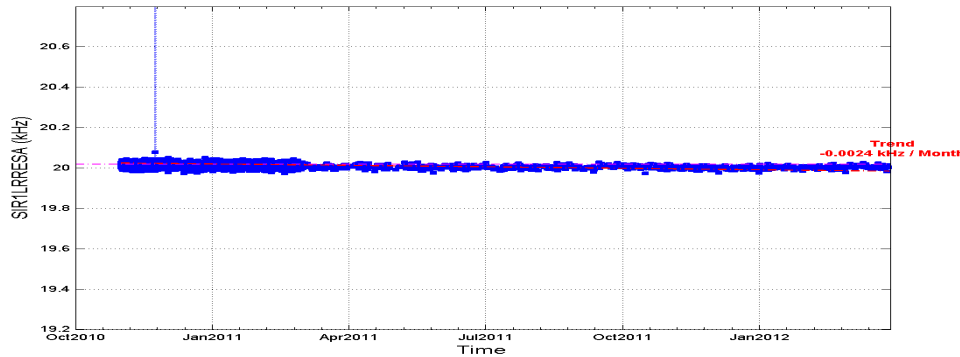
## Evolution délais

- Délais stable
  - 0.02 kHz de variation (< 3 ps)
  - <0.004 kHz tendance (<< ps)



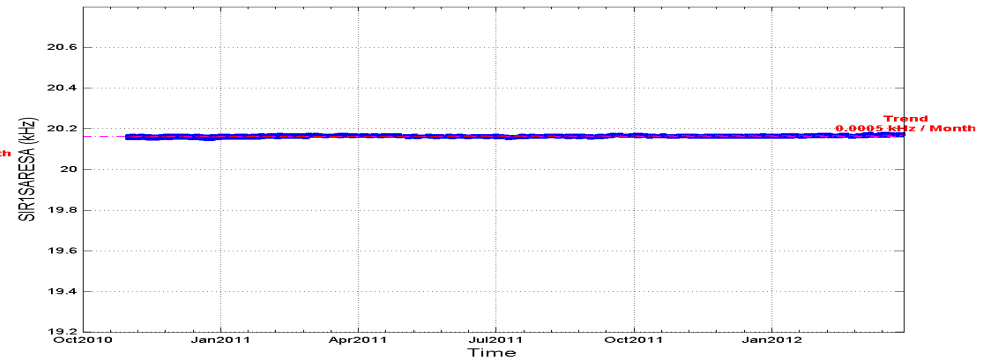
**LRM**

SIRAL2 - CAL1 LRM SIR-A Rx1 : RIR 3-dB resolution (SIR1LRRESA)  
(Mean = 20.02 kHz - Standard deviation = 0.28 kHz - Trend = -0.0024 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



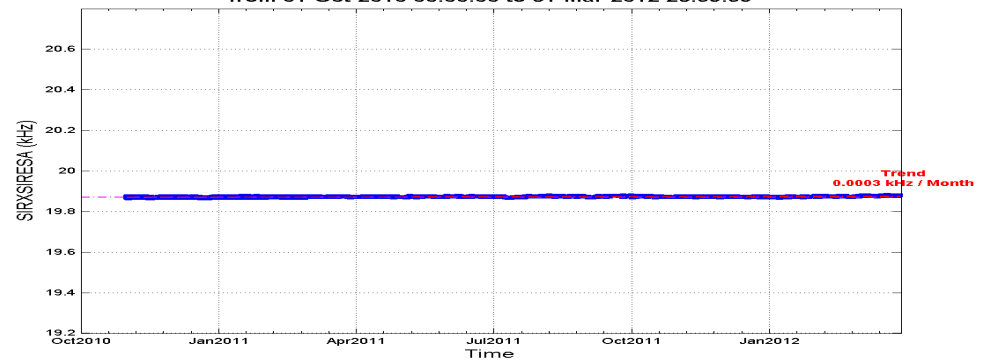
**SAR**

SIRAL2 - CAL1 SAR SIR-A Rx1 : RIR 3-dB resolution (SIR1SARESA)  
(Mean = 20.16 kHz - Standard deviation = 0.004 kHz - Trend = 0.0005 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



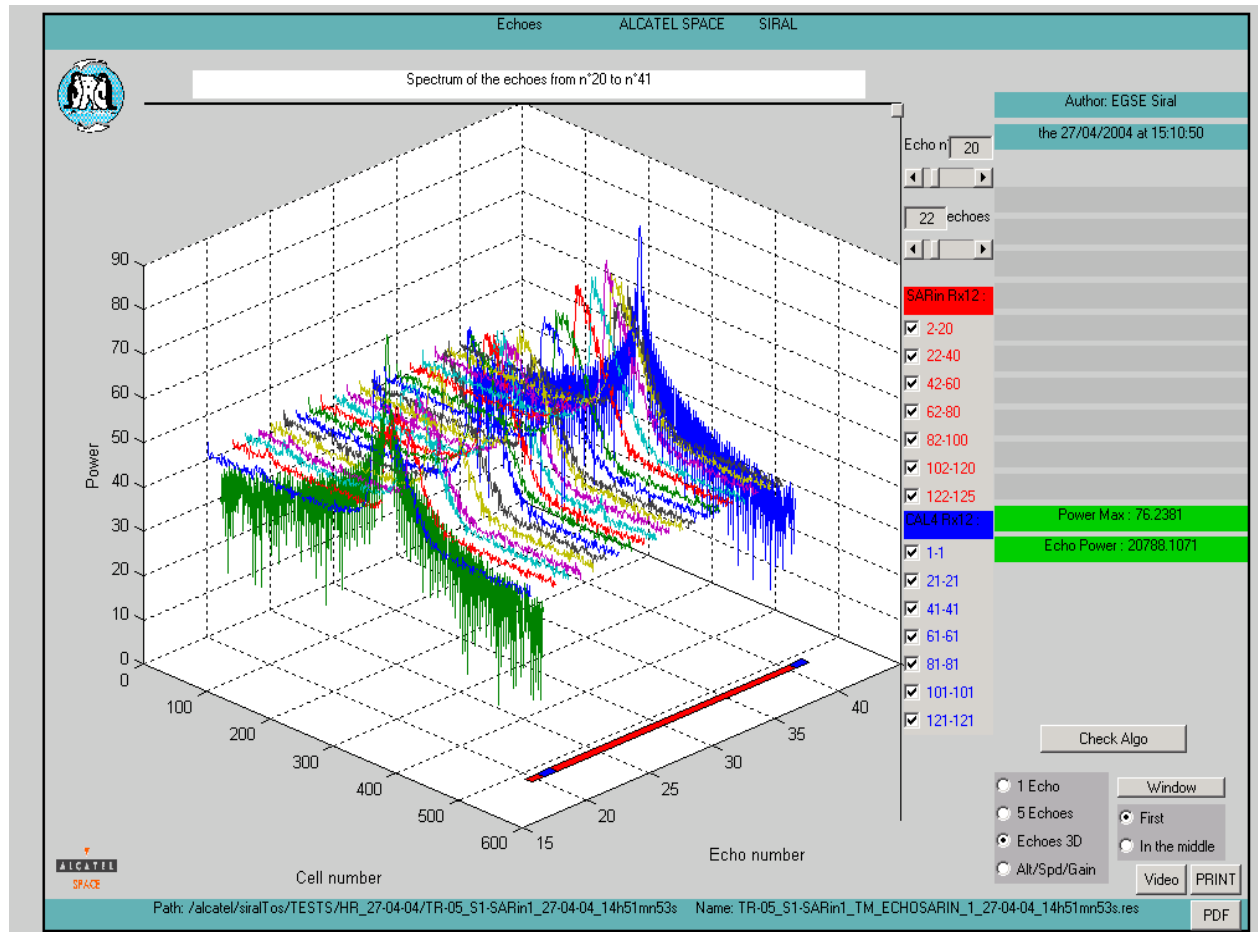
**SARin**

SIRAL2 - CAL1 SARin SIR-A Rx1 : RIR 3-dB resolution (SIRXSIRESA)  
(Mean = 19.87 kHz - Standard deviation = 0.003 kHz - Trend = 0.0003 kHz / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59

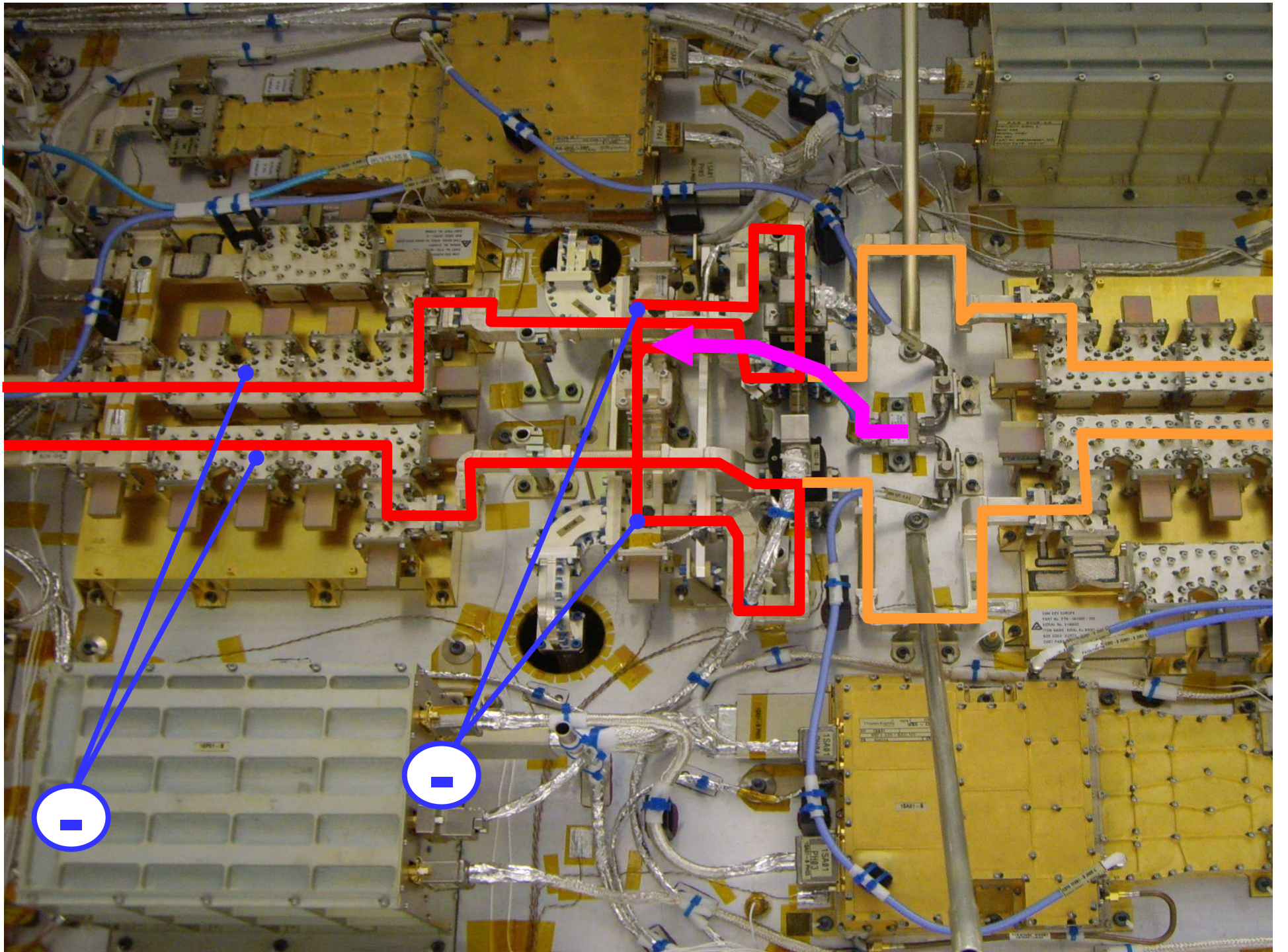


## Evolution de la résolution

- résolution stable
  - 0.004 kHz variation
  - <0.001 kHz tendance

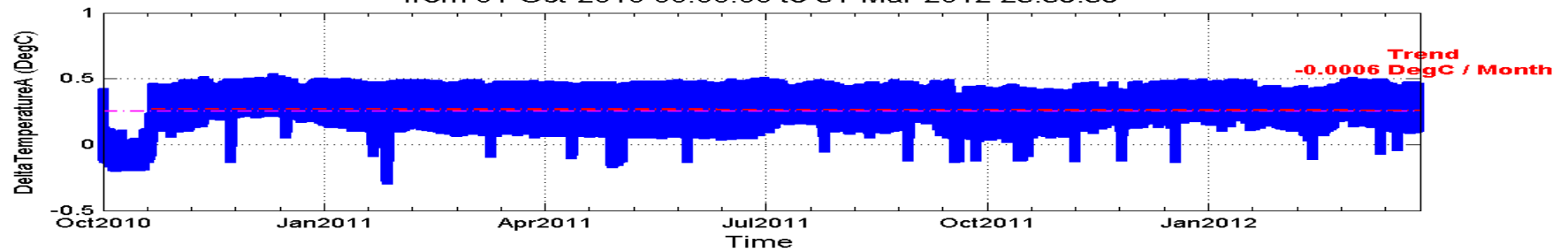




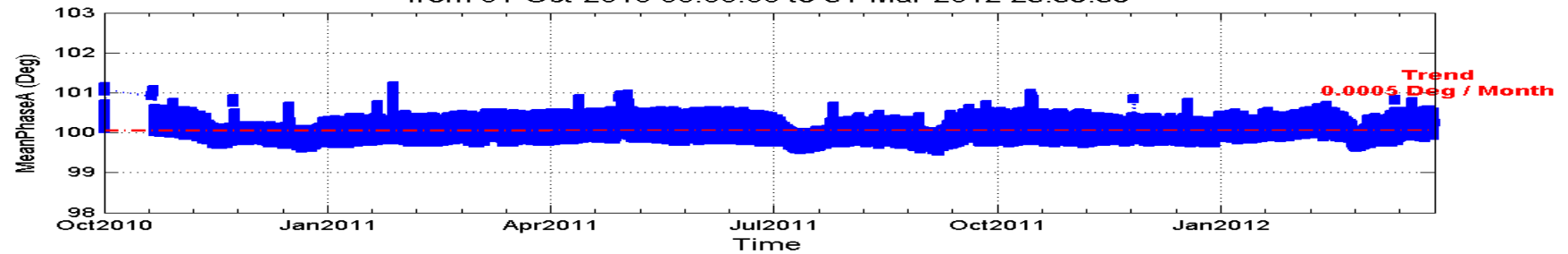




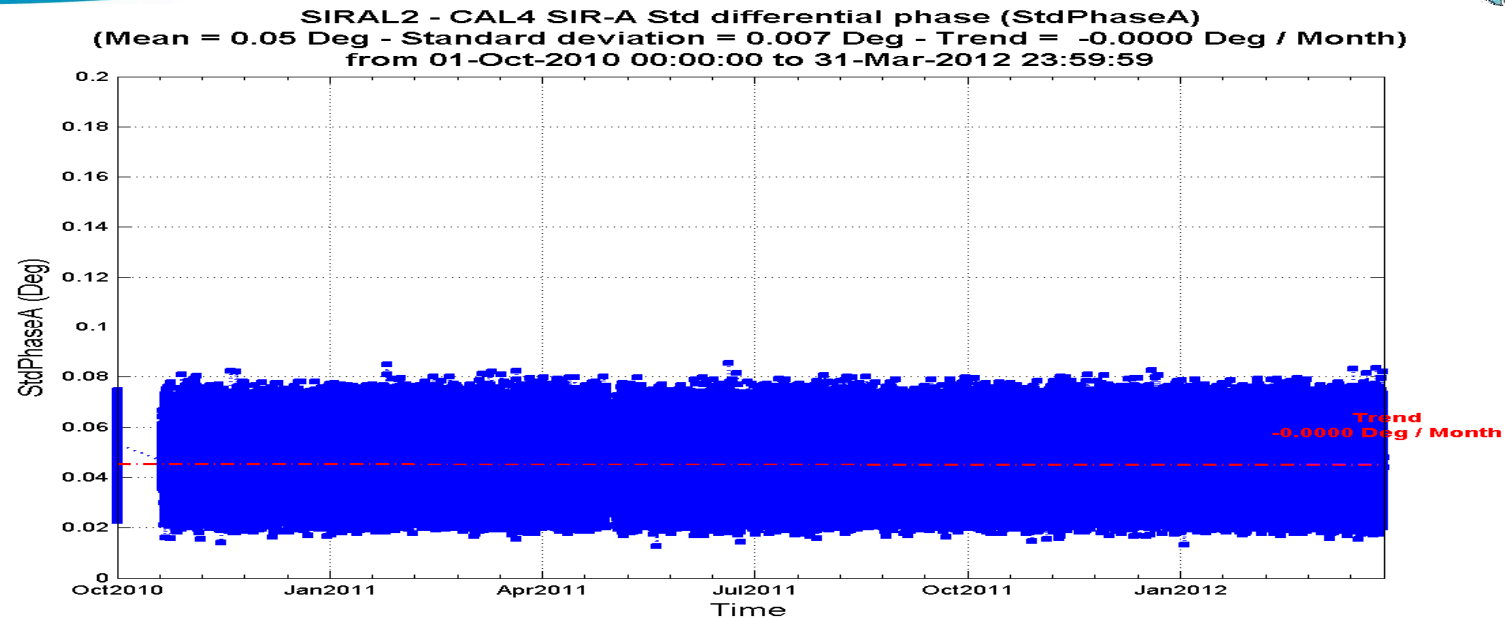
SIRAL2 - SIR-A : delta-temp : (cal-coupler (Rx1-Rx2)) + (wg dpx (Rx1-Rx2)) (DeltaTemperatureA)  
(Mean = 0.25 DegC - Standard deviation = 0.09 DegC - Trend = -0.0006 DegC / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59



SIRAL2 - CAL4 SIR-A Mean differential phase (MeanPhaseA)  
(Mean = 100.06 Deg - Standard deviation = 0.15 Deg - Trend = 0.0005 Deg / Month)  
from 01-Oct-2010 00:00:00 to 31-Mar-2012 23:59:59







## Evolution de la phase interférométrique

- La phase interférométrique varie suivant la température  $0.5^{\circ}\text{C} \Rightarrow 1\text{deg}$
- L'écart type des mesures est constant : 0.05 deg



## STABILITE DE L'INSTRUMENT

- L'instrument a une grande stabilité de la phase interférométrique
- Les évolutions constatées sont étalonnées et concernent :
  - La température différentielle des chemins de réception
  - Le produit puissance transmise / gain reçu équivalent à Jason 2
- Les performances délais et résolution donnent d'excellents résultats qui assurent une bonne qualité de données