Global Altimeter Measurements By Leading Europeans (GAMBLE) Background

- The « purple book » The Future of Spaceborne Altimetry, ed. by C. Koblinsky, P. Gaspar and G. Lagerloef, 1992
  « It is essential that the different altimetric missions be coordinated and optimized through an international scientific working group so as to satisfy the main objectives … »
- Many studies have proven the benefit of jointly use multi-satellite data sets (ERS1-2 with T/P and GFO ?) will continue with Jason-1 and ENVISAT
- Preliminary studies/discussions on the subject:
  - T/P-Jason SWT splinters
  - AltiKa, Gander, SWIMSAT, NPOESS, WITTEX, WSOA requirements
  - « High Resolution Ocean Topography » Working Group, March 2001 committed by NASA to make recoms on the future of altimetry
  - Others….

Two main objectives

- Typical space/time resolution/accuracy requirements for:
  - Sea Surface Topography: 2 km/2 days/2 cm
    - **coastal dynamics**,
    - internal tides, internal waves,
    - Mesoscale, eddies and fronts,
    - physical-biological interactions,
    - operational forecast
  - Sea State: 200 m/2 hours/20 cm
    - **Wave spectra**,
    - storms/hurricanes monitoring and warning,
    - sea-state nowcast and forecast,

French-USA-ESA flying missions status

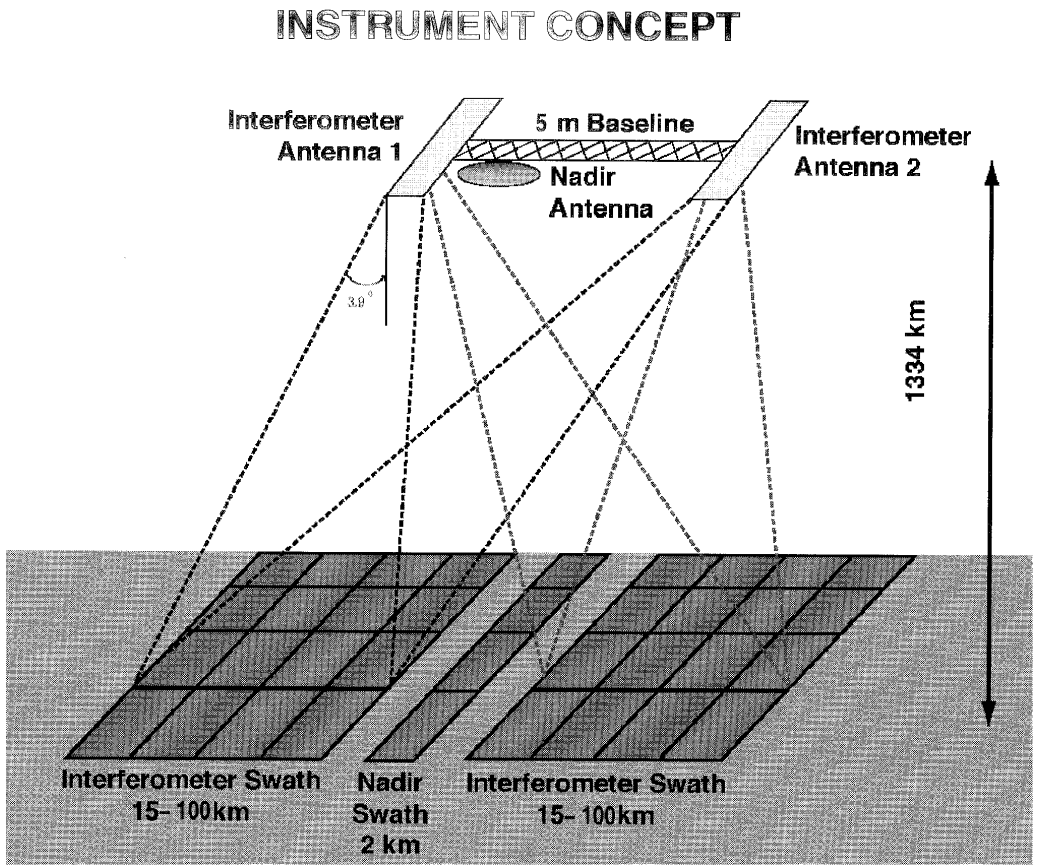
- **GFO**: launched in early 98, accepted by Navy on Nov. 2000, time tagging, POD issues are almost resolved (cf Fall AGU 2001). First GDR data delivered by NOAA (starting in August 2001)
- **TOPEX/POSEIDON**: Still working well, follows Jason-1 by 1 mn, recent good news :NASA decision to continue the operations at least until end of 2003
- **Jason-1**: launched Dec. 7th 2001, All instruments OK, In-flight assessment successfull, first data delivery to Pis/CoIs on March 21
- **ERS2**, still working despite some mispointing problems
- **ENVISAT**: Successful launch on March 1rst, 2002, First Altimeter and Doris measurements OK. Data delivery to Pis by end of May

New altimetric missions

- **Jason-2,** scheduled for 2005
  - CNES budget in place for Platform, system, Doris and Alt procurement
  - EUMETSAT Preliminary program approved for 50% funding of EU part, final decision in October 2002
  - NASA confirmation review in late summer 2002
  - NOAA participation in ground operations and data process/distribution
  - Baseline: same payload and orbit as Jason-1

- **WSOA**, the Wide Swath Ocean Altimeter (proposed by JPL)
  - A new technology to provide direct mapping of currents
  - On-going discussion between CNES/NASA/EUMETSAT/NOAA to decide WSOA demonstration on-board Jason-2, critical issues are:
    - No additional risk to core mission
    - Compatibility with Proteus platform
    - Schedule and cost impacts

WSOA (proposed by JPL)



New altimetric missions (cont'd)
Gamble perspective

- **NPOESS** Alt altimeter scheduled in the 2010 time frame
  - Still 2 options being studied
    - Using NPOESS sun-synchronous platform (22 days repeat recom,CSR study)
    - Using a dedicated satellite (18.8 days repeat recommended, CSR study))
  - A decision on the orbit choice end of 2002 ?
- **Wittex** (proposed by APL)
  - 3 doppler altimeters flying in different configurations
  - Conventional technology for SSH mapping
  - Weakly supported in US (preference for WSOA?)
- **Oceanwatch**, post ENVISAT Ocean program at ESA
  - 2008 Time-frame, Expected Ocean watch mission AO in 2002
  - Recent AO for innovative altimetric concepts (ASPI response selected)
- **Gander** (T. Allan), **AltiKa** (P. Vincent), **SWIMSAT** (D. Hauser)

WITTEX (proposed by JHU)