

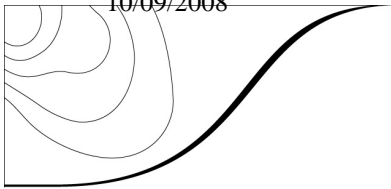
**FRENCH TENDER FOR RADIOSONDES :**  
**PROCESS AND RESULTS OBTAINED IN 2007**

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**ABSTRACT**

Every 3-4 years, Météo France realizes tenders to get the most cost / effective consumables for its radiosounding networks, composed by 22 stations. The last tender for radiosondes and ground equipments has been conducted in 2006 – 2007 . The criteria used to evaluate the systems are presented as well as the main results of the technical evaluation.



## Tenders for radiosounding in Météo-France

- Consumables every 3-4 years
  - **Radiosondes (in 2006,next in 2009)**
  - Helium (2008 metropolitan area different for oversea territories)
  - Balloons (next in 2009)
  - Parachutes (in preparation for 2008)
- Equipments for radiosondes
  - Reception and decoding ground station
  - Interfaced with MF homemade software (STAR II)
  - Leased and doubled
  - Antena, ground tuner, accessories
- Process : about one year to finalize a tender
  - Documents to consult the suppliers : CCTP, CCAP, RC, AE
  - Offers evaluated with technical delivery and financial criteria
  - Choices decided at the highest level in MF

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## Radiosondes tender in 2006

- Needs
  - All the sites of the French radiosounding network
    1. The entire network except Bordeaux
    2. The station of Bordeaux with Autosonde
  - Sondes GPS + leased equipments + services
  - Useful for 2007 to 2011 , next tender in 2009 for 2010 to 2014
  - Quantity : min 20000 – max 60000
- Evaluation
  - Technical : 60 %
    - 11 criteria : 7 for sondes, 3 for equipment, 1 for documentation
    - 60 sub criteria : 34 for sondes, 14 for equipment, 2 for documentation
    - 5 quotations for the sub criteria : ++, +, 0, -, --
  - Cost : 30 %
  - Delay : 10 %

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## Example of quotation of sub criteria for the sondes

A quotation is given for the different main criteria after an evaluation of each sub criteria corresponding to a specific requirement expected in the tender

	Radiosonde 2	Radiosonde 1
Metrological quality in P, T, Hu at the surface	+	+
Metrological quality in P, T, Hu in altitude	+	+
Metrological quality in Hu below -40°C	++	+
<b>Metrological quality of sondes in P, T, Hu</b>	<b>4/6</b>	<b>3/6</b>

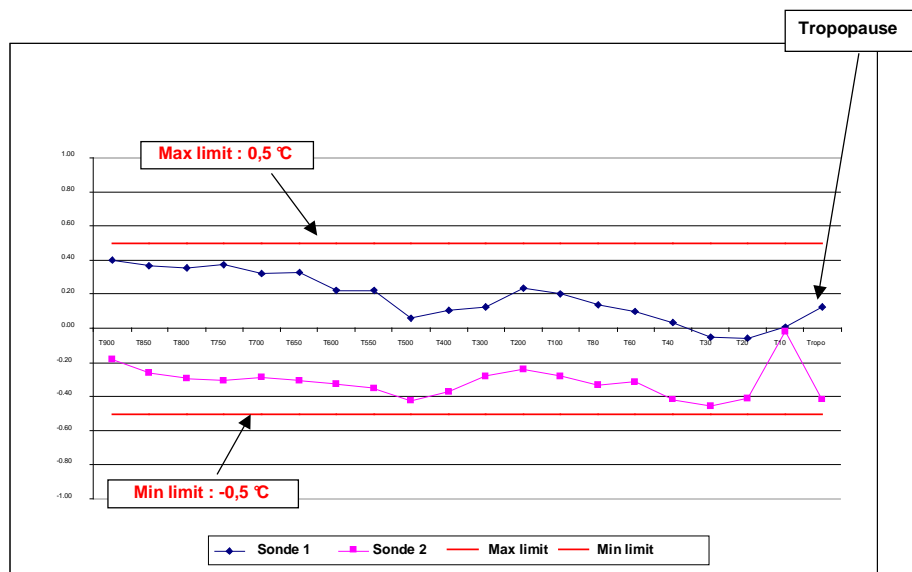
Availability in wind measurement during ascent	+	+
Metrological quality of Wind	++	++
<b>Metrological quality of sondes to deliver Wind</b>	<b>3/4</b>	<b>3/4</b>

Sondes rejected at the ground	+	+
Robustness of sensors	0	+
Ease to unroll the string	+	++
Autonomy and quality electromagnetic quality	+	+
<b>Technical quality of sondes</b>	<b>3/8</b>	<b>5/8</b>

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## Sondes comparison on temperature in 2006

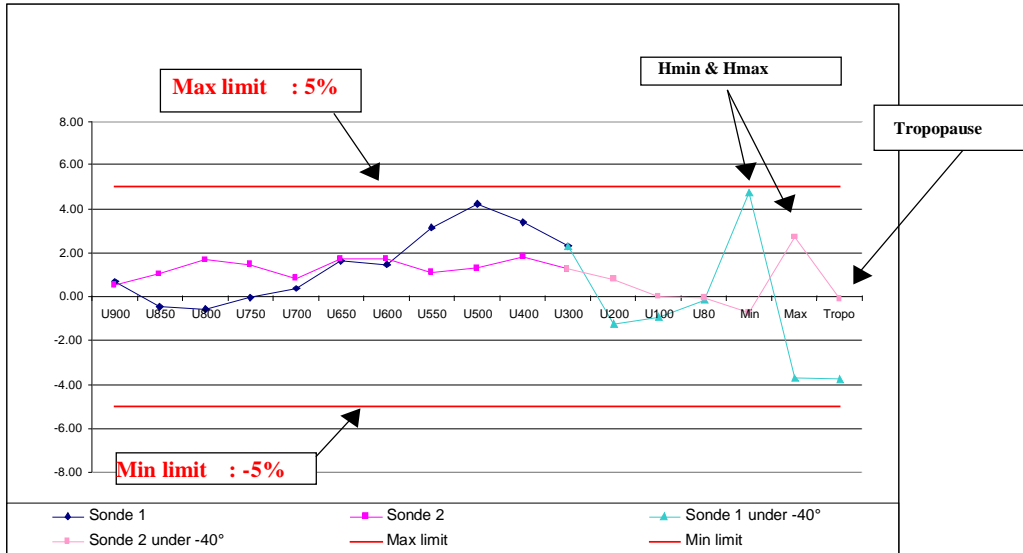
Mean temperature differences observed on 25 soundings compared with sondes of reference.



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## Sondes comparison on humidity in 2006

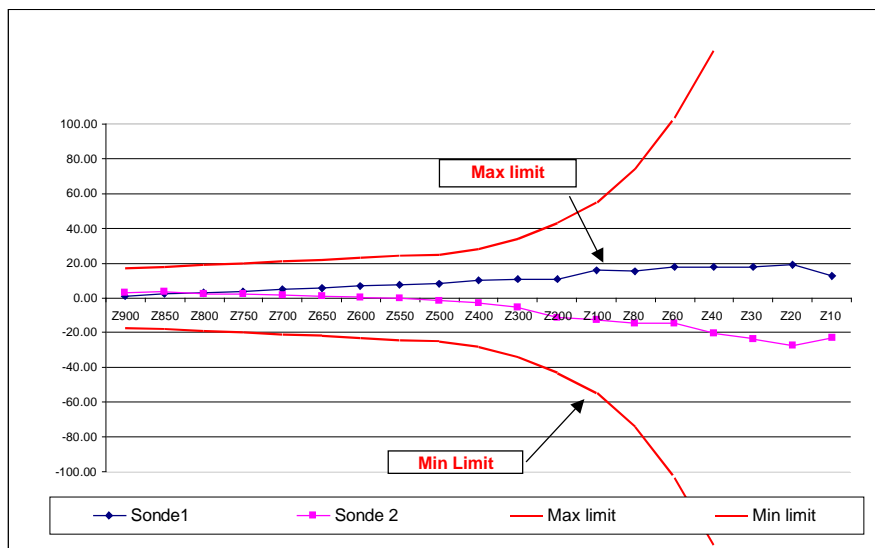
Mean humidity differences observed on 25 soundings compared with sondes of reference.



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## Sondes comparison on altitude and wind in 2006

Mean altitude differences observed on 25 soundings compared with sondes of reference.



Availability of GPS data : > 95 %; Wind forces differences very low : < 1 m/s

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## Criteria and results for the RS tender in 2007

General requirements in the open tender	Sonde 2	Sonde 1
Metrological quality of sondes in P, T, Hu measurements	4/6	3/6
Metrological quality of sondes to deliver Wind measurement	3/4	3/4
General availability of measurements during the tests	3/4	3/4
Weight of the sondes	2/4	3/4
Ease to implement and control the sondes	6/10	9/10
Rejection of sondes at the ground	1/2	1/2
Robustness of the sensors of the sondes	1/4	2/4
Ease to configure and to operate the software used to manage the ground system	3/6	5/6
Functioning of the ground equipment	2/4	2/4
Ease to maintain the group equipments	3/4	3/4
Quality of the documentation	2/2	2/2
<b>Final technical evaluation</b>	<b>30/50</b>	<b>36/50</b>

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## French RS Network at the end of 2008 (22 sites)

