

AQUARIUS/SAC-D

7th Aquarius/SAC-D Science Meeting

Argentine Data Collection System Features and Applications

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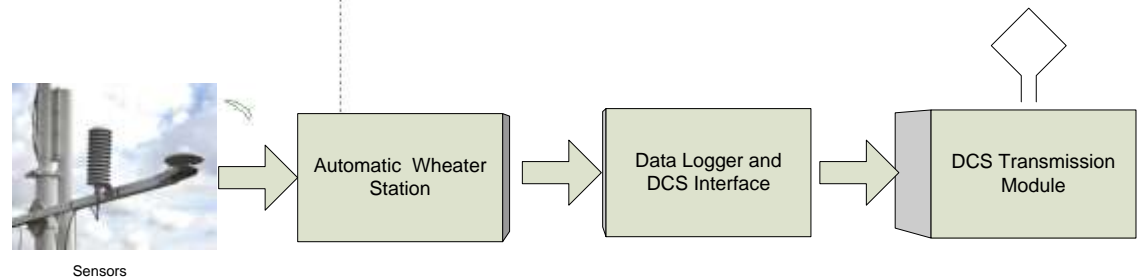
April 11-13, 2012
Buenos Aires, ARGENTINA



- DCS (Data Collection System) is a system designed to gather information from ground user platforms, called DCP (Data Collection Platform) by a satellite based data receiver. The DCP transmit information asynchronously and this data is received, decoded and stored onboard the satellite for later transmission to earth.
- The Pre Processing and Distribution Center receives the data of the Observatory, processes it and addresses the data to the users
- The DCP will have characteristics of reliability, low power consumption and low maintenance so that they can be allocated in inhospitable and difficult access areas
- The system will be able to manage at least 200 platforms in the Argentine territory
- The DCS was assembled in the SAC-D Aquarius satellite and is fully operational



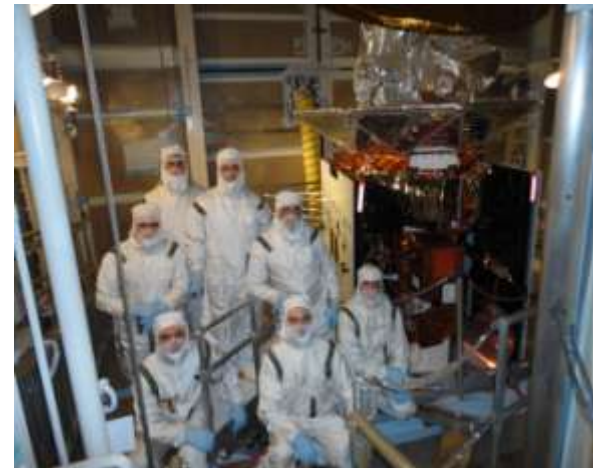
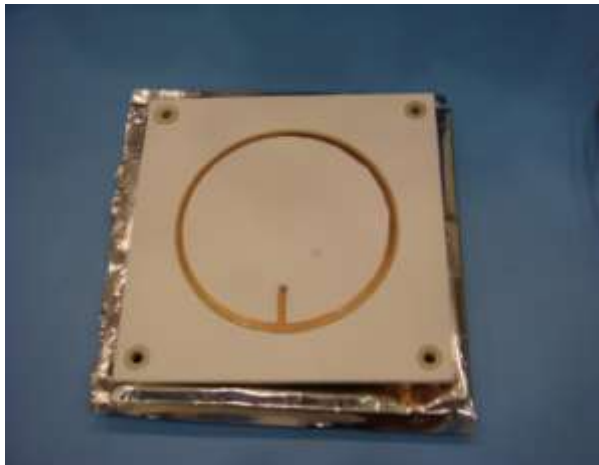
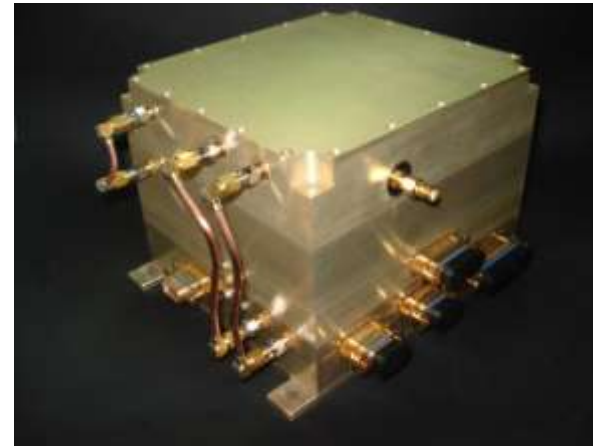
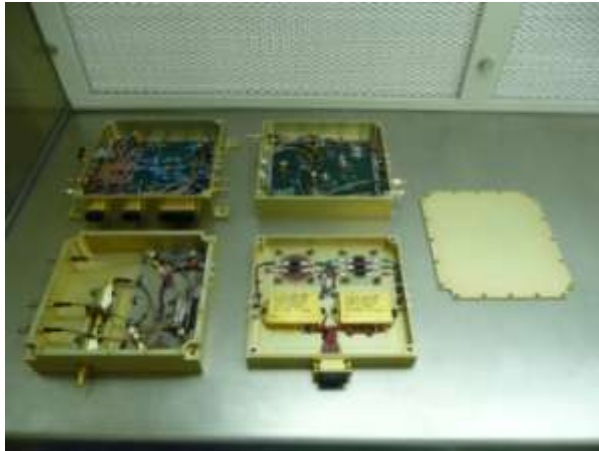
Data Collection System Schema



Data Collection Platform Schema



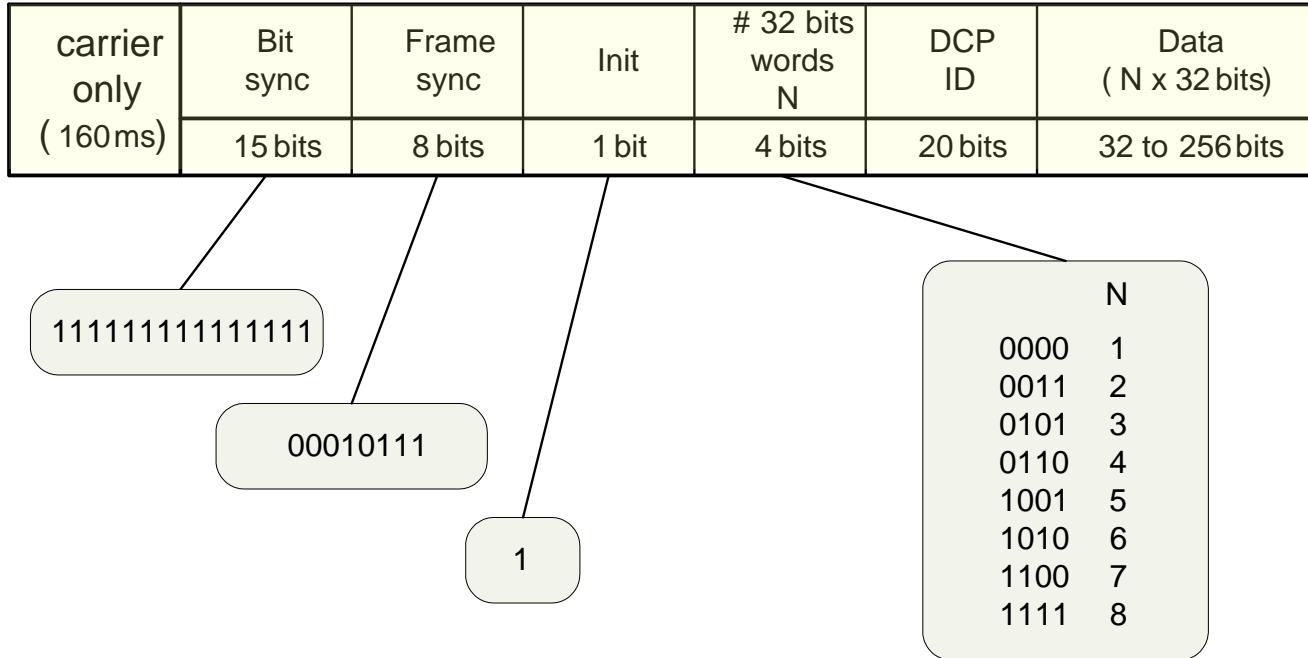
Main Specification	
Coverage	National and Regional (world coverage upon request)
Operation Mode	Store and Forward
Platform Density	200 (maximum at Argentine territory)
Platform Operation	Random transmission(60 to 220 sec period)
Revisit	2/4 contacts per day (two at morning, two at afternoon, 12 hours separation)
Footprint	2300 Km
Message type	ARGOS Compatible
Message size	46 bytes Maximum useful data 32 bytes
Tx Message duration	Max 920 ms
DCP position determination	None (GPS optional)
Reliability	CRC (optional)
Uplink	UHF 401.55Mhz
Medium Access Mode	Pure Aloha
Statically Successfull Receptions	18.4% (at least one successful reception per platform per satellite contact)
User access delay	< 1 day Note: after commissioning experience this value may be 5/7 hours, depending of processing and distribution delay time
Simultaneous message received	1 max

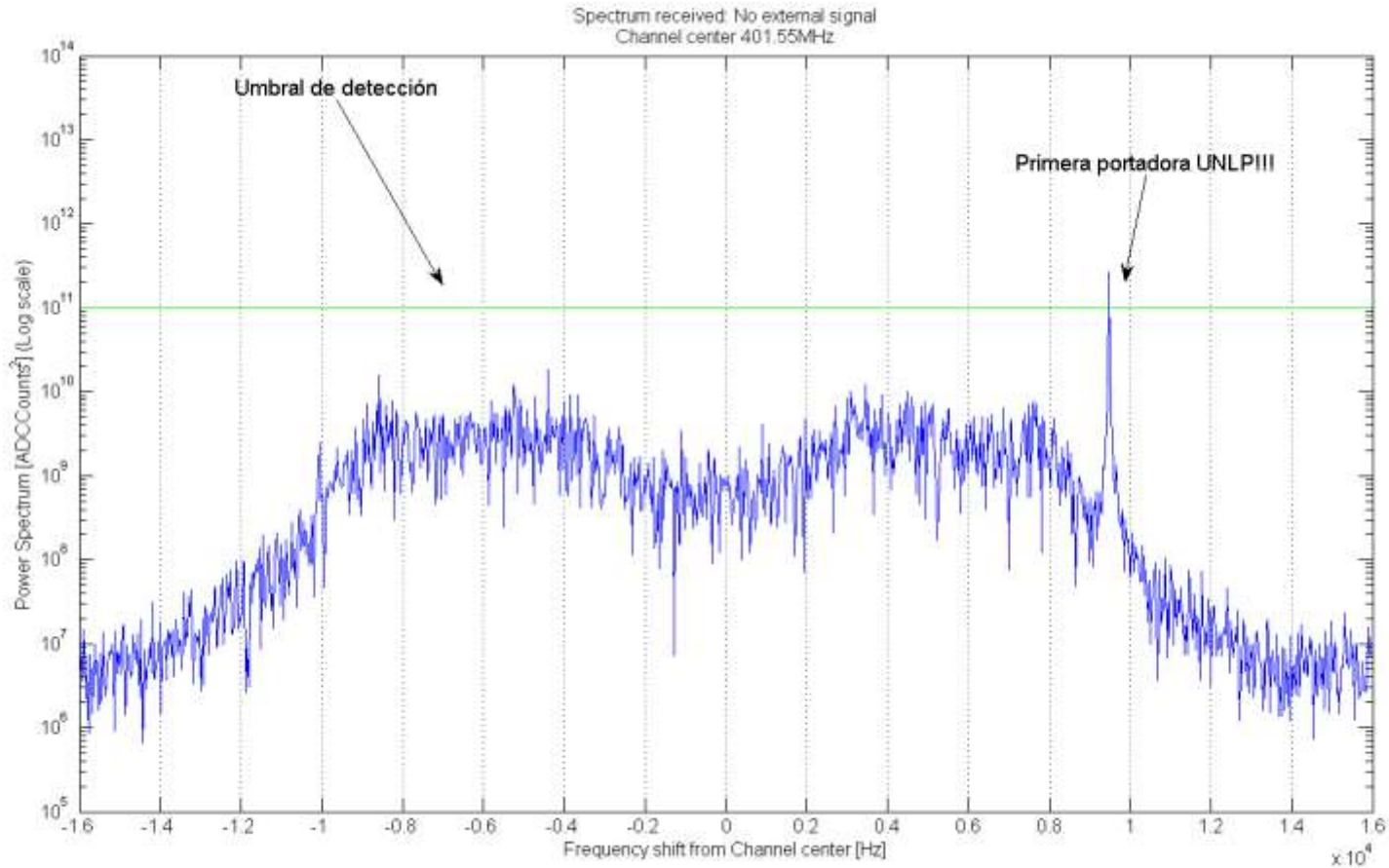


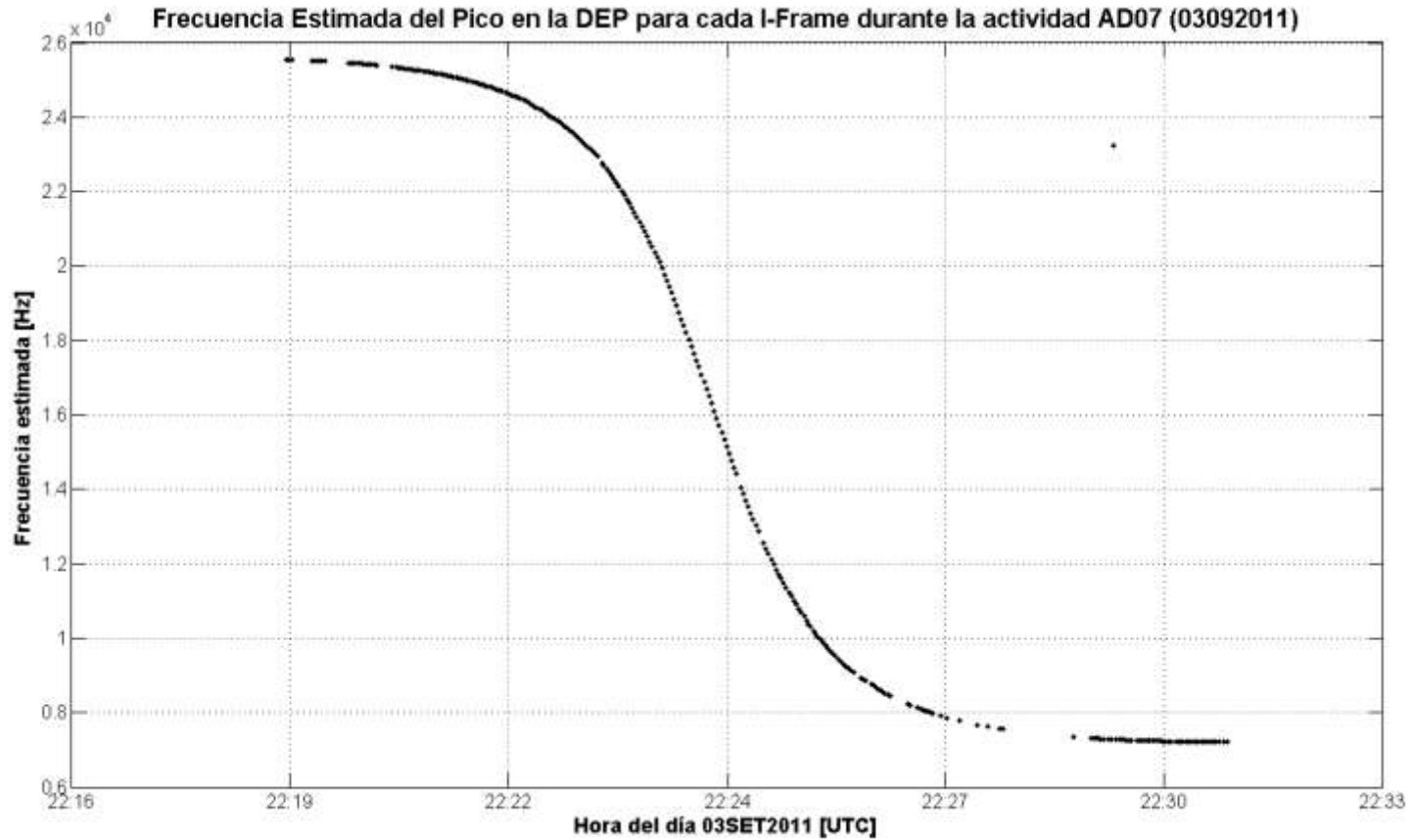


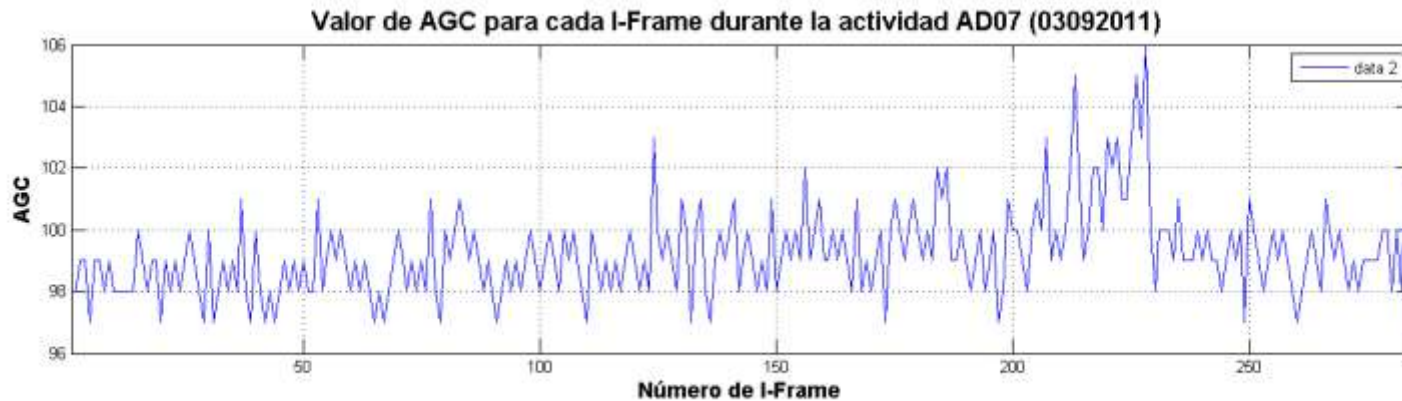
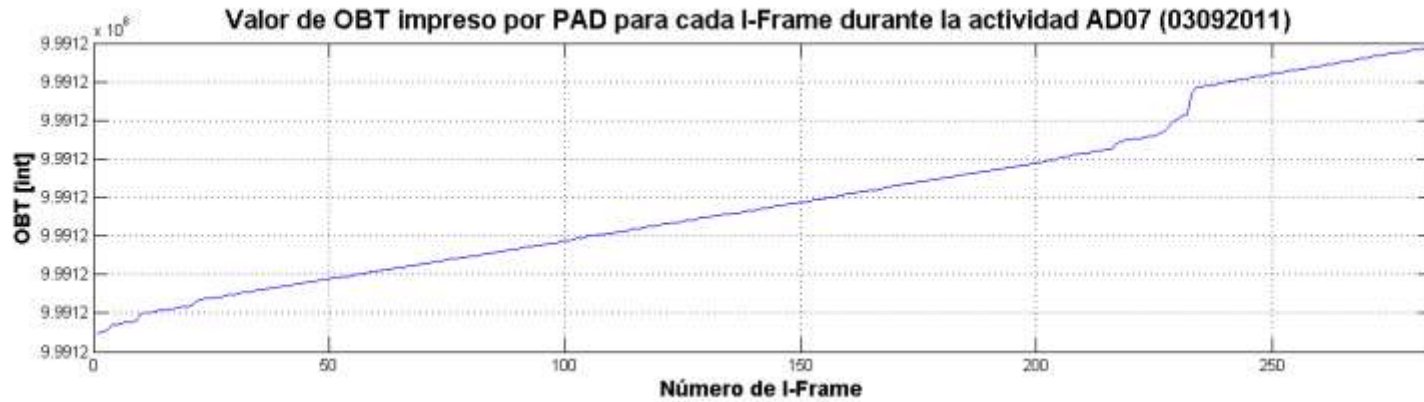
- **During commissioning phase, we've received signals from:**
 - PTT FI-UNLP at Facultad de Ingeniería, La Plata.
 - SCD System PCDs over Brazil and Argentina
 - ARGOS System DCPs over Brazil and Argentina

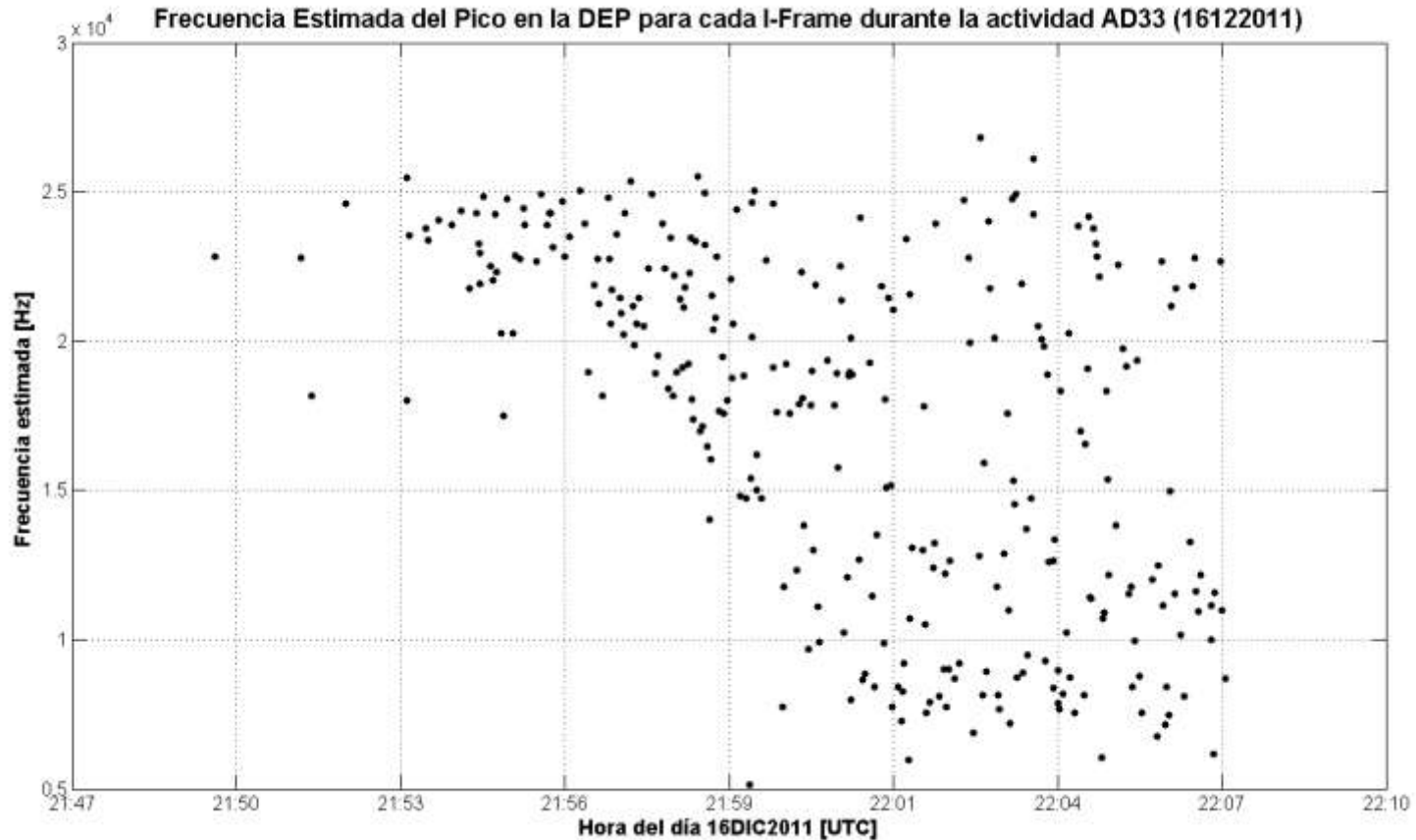






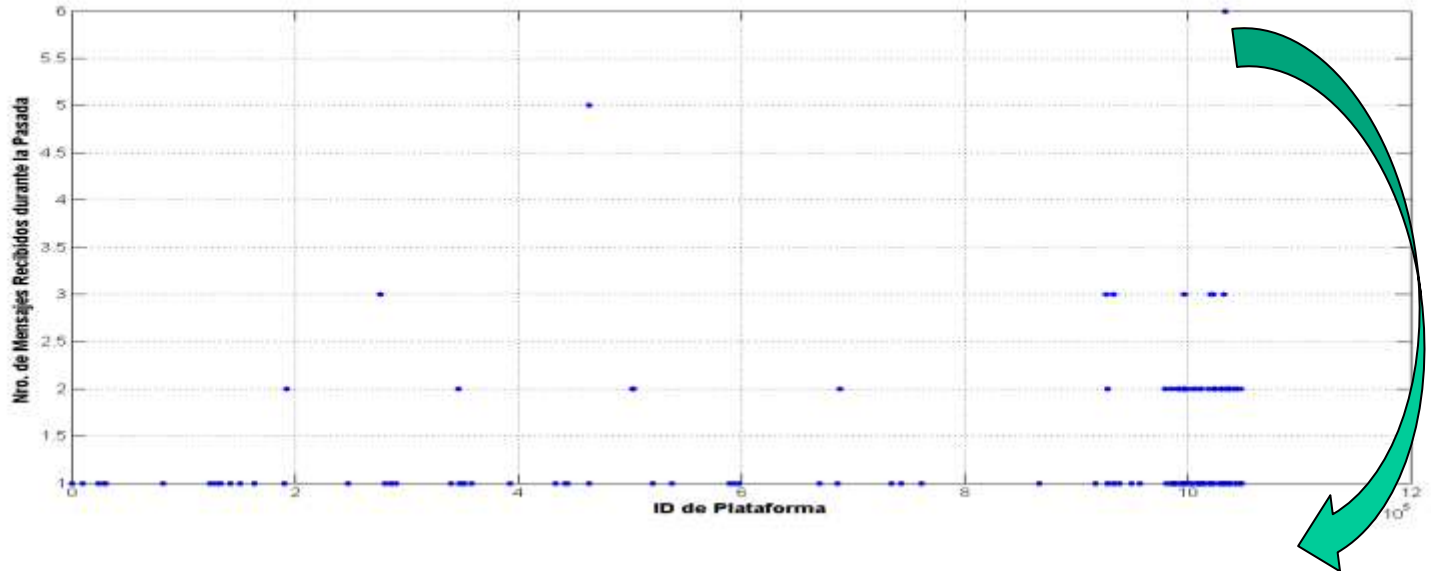






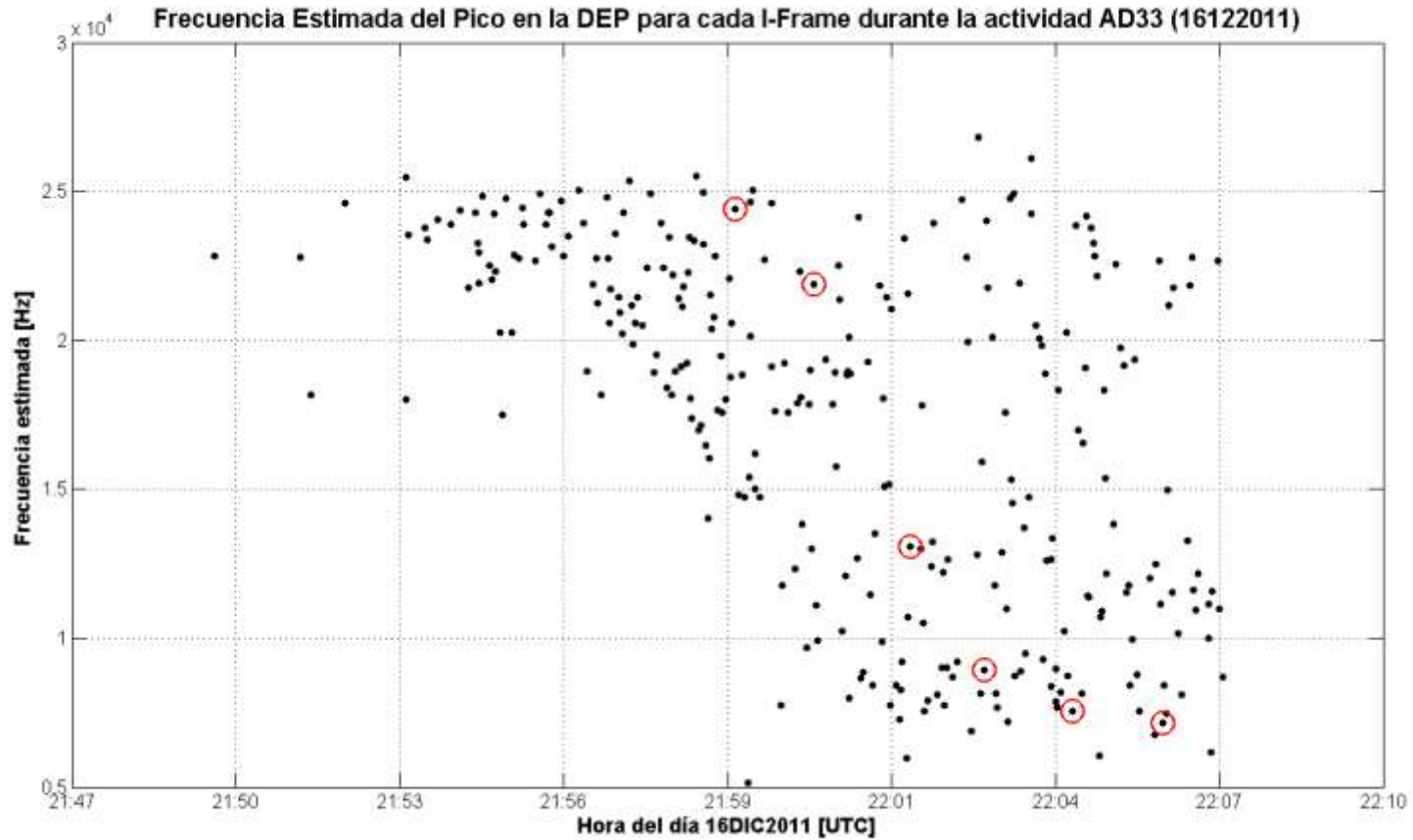


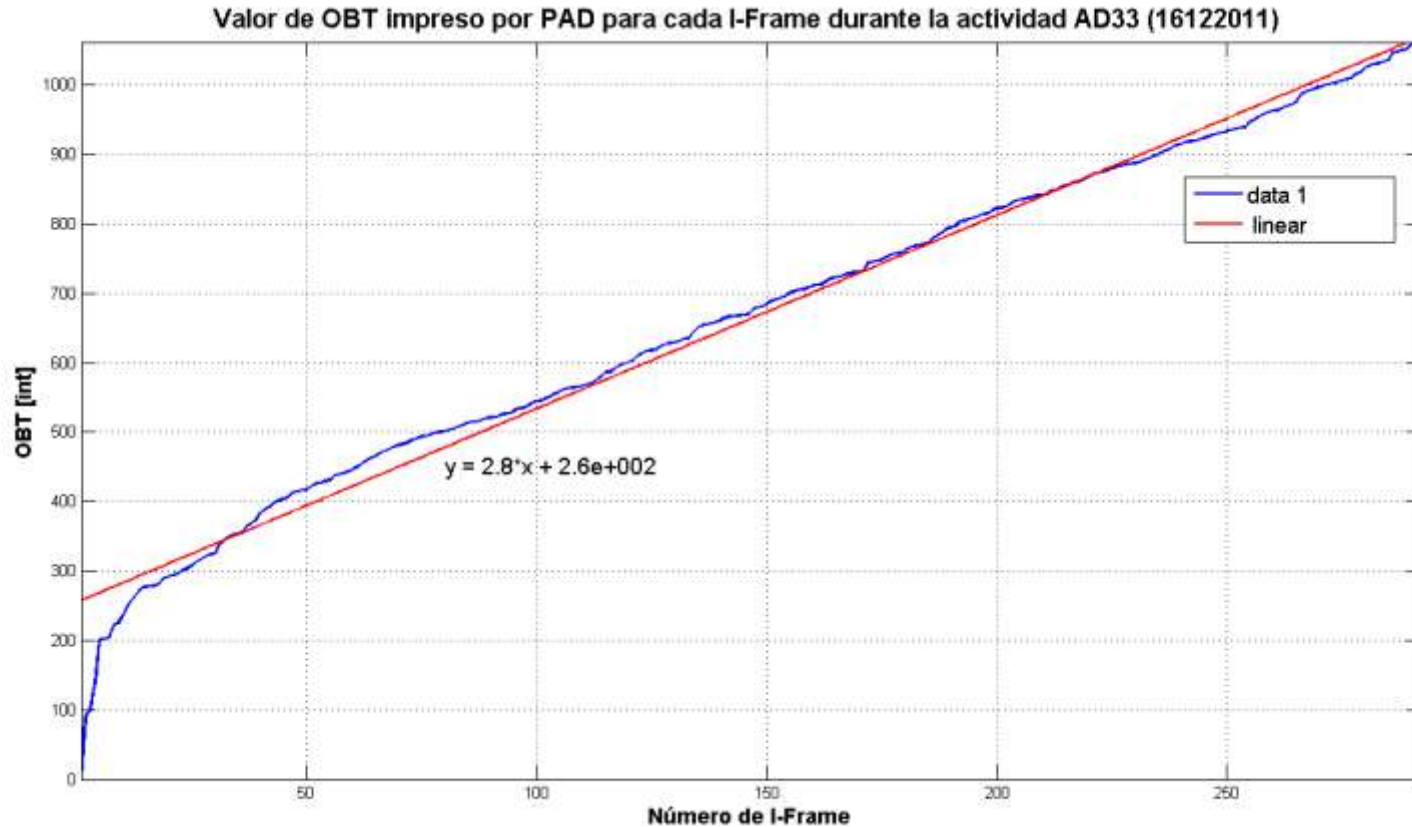
Number of I-frames received vs DCP ID number



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FFC8037DAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA84
FFC8037BAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA5E
FFC8037BAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA12
FFC8037BAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA90
FFC8037BAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA00
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Trayectoria del SAC-D durante la Actividad AD168 (25MAR2012)

