

Activity Title:	SSRA EQM Development		
Contract type	ARTES3-4	Budget (k€)	3357
Company (-ies) (including country)	THALES ALENIA SPACE FRANCE		
Team (name of the participants in the project)	Schreider Ludovic (TAS-Fr) Fabries Christophe (TAS-Fr) Fabien Calmettes (TAS-Fr) Jerome Brossier (TAS-Fr) Frederic Michard (TAS-Fr)		
(*) Speaker (s)	Schreider Ludovic	Email	ludovic.schreider@thalesaleniaspace.com
Short Speaker Information (experience and involvement in this project – maximum 60 words)	Antenna engineer at TAS-Fr since 2008, in charge of : SSRA EQM development as Project and RF activities manager		
Summary of the activity (maximum 400 words and 2 pictures)	<p>Satellite operators are pushing for a competitive communication satellite industry. On one hand, they look for rationalizing their fleet and require both price and schedule reduction. On the other hand, to keep market shares, satellite operators call for more reactive and versatile solutions to quickly grasp new markets and to adapt to the short-term evolutions. Satellite industry shall take up the challenge by improving both current telecommunication satellites and offering new generation of satellite technology, more flexible and able to address new markets.</p> <p>In term of flexibility, there is not a unique antenna solution for all applications. The degree and nature of flexibility within telecommunication satellites nevertheless depends on the final needs. The flexible antenna solutions shall be a compromise between the levels of achievable RF performances flexibility and some other driver parameters like cost, mass, power budget...</p> <p>This ARTES3-4 project aims to develop an antenna solution keeping the advantages of the "conventional" solutions (antenna RF efficiency, power handling, heritage and risks minimization, cost ...) and answering at the same time to coverage flexibility needs in Ku band.</p> <p>This new antenna solution called "Selectable Sub-Reflector Antenna" is steerable (pointing anywhere on Earth) and able to generate 1 shaped or pencil beam among 4 possible. The antenna configuration is a dual optics Gregorian, composed of 4 shaped sub-reflectors. The desired sub-reflector is positioned in front of the feed thanks to a rotary actuator. A new antenna structure has been defined, studied and realized. RF analysis have been done on a typical mission scenario to define the achievable performances and also to evaluate potential scattering impact due the new antenna structure.</p> <p>A new process of sandwich panel assembling has been defined and qualified. Coupled load analysis with several platforms have been done to derive the appropriate mechanical requirements in order not to oversize the product. Once the detailed design of the antenna has been done, it has been manufactured and tested. Mechanical testing, TED, thermal cycling and life test in TVAC have been done.</p>		
			

(*) The speaker needs to do the registration through this website