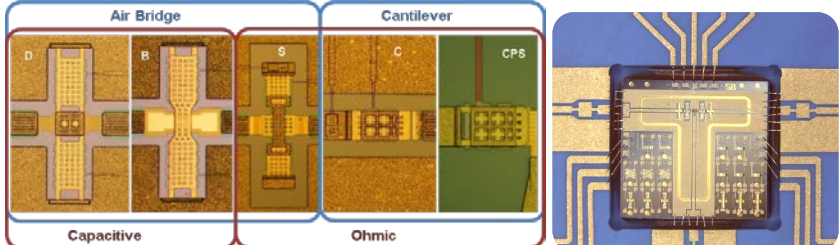


Title:	“High Reliability MEMS Redundancy Switch “		
Contract type	TRP	Budget (K€)	750 K€
Company (-ies) (including country)	Fondazione Bruno Kessler, prime (I), TAS-I, (I), UniPg, (I), UniPd, (I), CNR-CMM, (I), TUM, (D)		
Team (name of the participant in the project)	B. Margesin (FBK), V. Mulloni (FBK), G. Resta (FBK), F. Giacomozzi (FBK), F. Solazzi (FBK), G. Mannocchi (TAS-I), F. Vitulli (TAS-I), S. DiNardo (TAS-I), M. Scipioni (TAS-I), R. Sorrentino (UniPg), P. Farinelli (UnPg), G. Meneghesso (UniPd), A. Tazzoli (UniPd), M. Barbato (UniPd), R. Marcelli (CNR-CMM), A. Lucibello (CNR-CMM), L. Vietzorreck (TUM), T. Kim (TUM)		
(* Speaker (s))	B. Margesin	Email	margesin@fbk.eu
Short Speaker Information (experience and involvement in this project)	B. Margesin: Expert in MEMS and microfabrication technologies. Responsible for the RF MEMS switch process development and for the fabrication of the prototypes. He was the coordinator of the project		
Summary of the activity (maximum 400 words)	<p>The scope of the activity was to demonstrate the applicability of the MEMS technology to high reliability RF redundancy switches for space applications. The main performances looked for were:</p> <ul style="list-style-type: none"> - Frequency band 0-18 GHz - IL < 0.5 dB (unpackaged) - Operating temperature -20°C /+55°C - Lifetime 15 Years with 1000 actuations max <p>In the first phase single SPST units were developed and tested in order to identify the best components for the SPDT redundancy switch. In phase 2 two prototypes, a narrow band and a wide band version, were designed and realized and packaged in custom RF grade hermetic packages based on LTCC technology. The devices were subjected to environmental and reliability tests and an extrapolated life time of 11 years for ohmic SPST units was found. Additional tests performed on hermetically packaged devices provided more details on the degradation mechanisms.</p>		
			

(*) The speaker needs to do the registration through the [website](#)