

ESF-ESA 'Forward Look' TECHBREAK
Technology breakthroughs for scientific progress
KICK-OFF CONFERENCE, 29-30 NOVEMBER 2010
BRUSSELS, BELGIUM

MONDAY, 29 NOVEMBER 2010

SESSION 1	SETTING THE SCENE (09:00 – 12:15)
09:00	Welcome: <i>M. Heppener (ESF) & J.P. Swings (ESSC Chairman)</i> TECHBREAK rationale and approach: <i>M. Cullum (SC and conference Chairman)</i>
09:20	The needs of the European Space Agency: <i>A. Giménez</i>
09:30	Scientific challenges and technological limitations <ul style="list-style-type: none"> • in ESA's Earth sciences: <i>J. Callies (ESA D-EOP)</i> • in ESA's human exploration: <i>S. Hovland (ESA D-HSF)</i> • in ESA's space science and robotic exploration: <i>M. Bardaz (ESA D-SRE)</i> • in ground-based astronomy: <i>M. Cullum/C. Cunningham (Techbreak SC)</i> • in (aero)space industry: <i>J.J. Tortora/P. Kamoun (Techbreak SC)</i>
10:45	COFFEE BREAK
11:00	Main lessons from the ESPI preparatory report: <i>C. Giannopapa (ESPI)</i>
11:10	Targeted discussion on space technology needs Who is doing what? What to do in the laboratory vs. what to industrialise? <i>Moderator/Rapporteur: Martin Cullum</i>
11:55	TECHBREAK methodology - Discussion <i>J.C. Worms (ESF) & K. Cuhls (ISI Fraunhofer)</i>
12:15	Lunch Break
SESSION 2	KEY ENABLING TECHNOLOGIES – NON SPACE (13:30 – 15:35)
13:30	The EC KET rationale and Europe's long-term strategy <i>S. Mueller, EC high-level KET group, EC DG-ENTR Unit D3</i>
13:50	Goals and limitations of KETs and other emerging technologies <ul style="list-style-type: none"> • Advanced Materials: <i>M. Falzetti (CSM, Chair EuMaT)</i> • Interfacial engineering & materials science: <i>C. Oehr (IGB Fraunhofer)</i> • Nanotechnology: <i>U. Dürig (IBM Research Zurich)</i> • Nanoelectronics: <i>A. Galetsas (EC DG-ISM G/1)</i> • Biomimetics: <i>J.F.V. Vincent (University of Bath)</i>

14:50	Targeted discussion on non-space technology potential for space Push-pull mechanism; technology watch systems; technology maturation programmes (Europe and elsewhere); risks. <i>Moderator/Rapporteur: Jean-Pierre Swings</i>
15:35	COFFEE BREAK
SESSION 3	KEY ENABLING TECHNOLOGIES – SPACE (16:00 – 17:30)
16:00	Drivers, challenges and showstoppers <ul style="list-style-type: none"> • European Space Technology Platform: <i>A. Tobias (ESA D-TEC)</i> • Space (nuclear) propulsion: <i>C. Bruno (Universita di Roma)</i> • Robotics (autonomy & decision-making): <i>M.R. Lavagna (DIA Polit. Milano)</i>
16:45	Targeted discussion on knowledge transfer from and to space domain <ul style="list-style-type: none"> • Using KETs for space technological breakthroughs • Categorising KETs: disruptive vs. continuous • Appropriate sub-categories ('granularity') enabling innovation mechanisms <i>Moderator/Rapporteur: Jean-Claude Worms</i>
17:30	ADJOURN 1 st DAY
19.30	DINNER at Restaurant <i>Rugbyman n° Two</i>

TUESDAY, 30 NOVEMBER 2010

SESSION 4	GAP IDENTIFICATION METHODOLOGY (09:00 – 12:00) Moderator: Kerstin Cuhls
09:00	Discussion in plenary session Gaps and differences identification (technologies that are found on one side, space or non-space, but not on the other) <ul style="list-style-type: none"> • Definition of criteria to filter and classify existing material (studies, platforms, literature both from space research and from other research) • Discussion of granularity level for technology sub-areas
10:00	Preparation of a survey questionnaire <ul style="list-style-type: none"> • Proposed model (ESF) • Template questions and recipients list
10:45	COFFEE BREAK
11:15	Next events: Generalists/specialised workshops (scope, contents, participants)
11:45	Action Plan: M. Cullum, J.C. Worms
12:00	ADJOURN CONFERENCE