

ECI, DC-DC converter initiative

De-Briefing and Comments after the
Roundtable event with industry held in
ESTEC on April 13th, 2005

EU generic DC/DC converters, actual status

- A lot of EU companies have more or less standards products (fully fledged Hi-Rel Rhard options – most remarkable examples being ALCATEL ETCA and ASPI) – but availability shall be confirmed and prices are on the high side
- Some EU companies are producing prototypes of DC/DC converters with use of COTs components, with a TBD up-screening process (GAIA, 3D-Plus), sometimes with alternative packaging methods (3D-Plus) – prices here are low but they are NOT qualified.

EU generic DC/DC converters, actual status

- Prices, and performances for EU parts are very similar to US ones for full fledged, Hi-Rel, RHard converters. Sometimes EU parts have better performances than US ones.

EU generic DC/DC converters, actual status

- The only way to define a **robust** approach for low cost EU converter (for instance, 3-4 KEUR for a 15W, dual output converter) would be to develop new screening flows and Non restricted PWM + FET Driver
- COTS components the main issue is the lack of defined up-screening criteria able to guarantee the required performance in lifetime and in space environment (radiation and outgassing being major issues to this respect).

EU generic DC/DC converters, DC DC converters or relevant components?

- An outcome of the roundtable is that it seems more urgent and appropriate to develop basic EU components to be used in DC DC converters (e.g. Hi-Rel, possibly RHard MFET drivers and PWM controllers) more than other DC DC converters.
- At present, Hi-Rel MFET drivers and PWM controllers are **only** available from US manufacturers, and may be subject to ITAR restrictions in the next future.

EU generic DC/DC converters, **Hi-Rel MFET drivers and PWM controllers**

- Hi-Rel MFET drivers and PWM controllers are strategic items to be able to develop not only generic DC DC converters, but also all other converters for specific applications (power system modules, EPCs, PPUUs, etc)
- The availability of the basic power conversion building blocks shall be logically guaranteed before the development of the hosting equipment.

EU generic DC/DC converters, other issues

- EU existing DC/DC converters products and solutions are not always known to external potential users (PIs, etc)
 - It is necessary to advertise what EU industry can offer!
- We were not able so far to collect the user's (e.g. independent payload payload developers) point of view.
 - A possibility is to send a duly prepared questionnaire to known institutes

EU generic DC/DC converters, conclusions

- EU has **already** a number of possibilities to offer for Hi-Rel, Rad-Hard converters, and new development activities for Hi Rel off-the-shelf, standard converters seems not to be justified
- The EU needs are more for EU Hi-Rel (possibly R-Hard) **MFET drivers** and **PWM controllers**, more than for other developments of converters
- It is necessary to **advertise** to potential users the existing converters that EU industry can offer!
- **User's** (payload developers) **point of view** shall be investigated