



Instrumentation
Technologies

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The Future of Existing Libera Family Members

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Libera **WORKSHOP**
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Upgrades and Support

Libera Brilliance (Libera Electron) comes with the Release 1.46 as a standard. There are one or two major releases foreseen each year (Spring and Autumn).

Libera Bunch-by-Bunch comes with the Release 1.40 as a standard. There is one major release foreseen each year (Spring or Autumn).

Subscription Benefits

Core Software, 1

- 1. Designing the future of Libera**
- 2. Extensive assistance (technical support team and Libera users)**
- 3. Additional deliverables**



Additional Deliverables

- **Complete installation-ready firmware and SW stack customized for a specific machine**
- **Updated manual and other documents**
- **Sources for all software under a GPL license**
- **Technical support**

Software under GPL License

Software	Commented sources	GPL
Kernel patches/distro build	yes(*)	yes
CSPI	yes	yes
Libera Kernel modules	yes	yes
Deamons (lmttd,lstd, health)	yes	yes
lscd daemon	no	no
FPGA Development Kit available		

Generic Server and EPICS Drivers

- 1. Released after each major release and**
- 2. Cover the functionality of the CSPI**
- 3. Under GPL license**
- 4. Additional deliverables**



Additional Deliverables

- **CD with the recent EPICS driver release + sources**
- **Updated manual and other documents**
- **Technical support (3 engineer days / year)**



Libera Upgrades & Support

- **Launch customers influence the features and performances from the beginning.**
- **Special attention is given to users' suggestions during continuous development of the software and enrichment/improvement of Libera's features.**
- **Result: successful product, tailored to customer needs.**



Users' Suggestions

- **In the past the suggestions were coming from different users separately, each user having its own ideas and needs.**
 - **This is beneficial due to diversity of the ideas, making the product really alive.**
 - **At the same time it is very difficult to manage different wishes into a common development, from management and development point of view.**
 - **Significant effort is also needed to inform and educate all users about the upgrades and their advantages.**

Wish-List

- **The idea to create a common user Wish-List, prepared within the community, came from the users.**
 - **This improves the quality of the communication between users, helping them to exploit Libera better.**
 - **It especially helps exploiting advanced Libera settings and properties, and sharing the ideas of measurement techniques as well.**
 - **The Wish List also simplifies the work on development side, making it more focused.**
- **We strongly support the Wish-List model and we'll try to play our role in the best way.**



FPGA

- **Not many/all users have the ability/possibility to dive into the FPGA programming world:**
 - **Linus Torvalds when asked what he'd start doing if he moved out of kernel programming: *I'd really love to do FPGA's, but I've always been too busy to really sit down and start learning.***
- **Interesting field**
- **Requires daily activities to keep the cutting edge**

FPGA Development Kit

- **Development kits**
 - **Simplify and speed-up the development cycle at the expense of lesser optimization**
 - **Getting new people on board**
- **Hardware and application specific environment for integrating user code**
 - **Verilog, VHDL (BPP: Diamond, Soleil)**
 - **System Generator for Simulink (BBB: ESRF)**
 - **Other sources: Matlab & toolboxes,**

FPGA Development Kit

- **The kit does not relieve users from understanding the FPGA concepts and the process of FPGA design building: clock management, constraints, ...**
- **Ideally: Matlab/Simulink user can do FPGA development**
- **Verified interfaces to HW are included**
- **High level programming not suitable for interfacing to hardware**

FPGA Development Kit, Contents

- **Contents:**
 - **Top module source code**
 - **Constraints**
 - **IP cores**
 - **Placeholders for user cores: Verilog and System Generator**
 - **System Generator demo application and configuration**
 - **Build scripts including configuration**
- **Live demo of FPGA development kit for LLRF in later session**