Software Defined Radio (SDR) Training

Learn how to develop for the GomSpace SDR platform.

The training module gives participants a thorough understanding of the platform and the Linux and FPGA environments. It also covers the CSP based distributed architecture used in GomSpace products and satellites as well as the GomSpace packages available for custom software development.

The module also contains an introduction to general GomSpace product interfaces and how to develop software that interfaces to GomSpace products.

Hands-on experiences is an integrated and important part of the workshop and it can be tailored to focus on specific GomSpace products.

SDR development training

The intent of the SDR training is for customer staff to get to know the GomSpace SDR HW, the available capabilities on the SDR, the associated development tools, as well as practical hands-on examples helping the customer development team off to a good start developing software and programmable logic for the SDR.

Learning goals for the training:

- To understand the Linux build system
- To understand the GomSpace FPGA reference design
- Know how to develop software that samples transceiver data
- Know how to stream data from the NanoSDR to a PC
- Know how to add your own IP core to the data stream in the FPGA
- Know how to add a new Linux device driver for an FPGA core
- To get a basic understanding of the Xilinx SoC architecture
- To know the basics of how the TR600 transceiver (AD9361) works
- Know how to configure the system for flight

Preliminary agenda example:

Time/Day	Day 1	Day 2	Day 3	Day 4	Day 5
10.00	Introduction	Agenda for the day	Agenda for the day	Day for customer trainees to experiment on their own with GomSpace engineers as mentors	Follow-up from yesterday
10.30	Installation of tools	Booting, Z7000 monitor, configuration	AD9361 configuration with examples		
11.00					System telemetry
11.30	NanoCom SDR presentation	FIR filter example	FPGA to PS interface		Preparing for launch
12.00					
12.30	BREAK	BREAK	BREAK		BREAK
13.00					
13.30	Linux development	FIR filter example cont.	LibIO usage		You pick the topic
14.00			FPGA debug		
14.30	SHORT BREAK				
15.00	FPGA development	SHORT BREAK	SHORT BREAK		SHORT BREAK
15.30		Capture I/Q to file and transfer to PC	SEM core & radiation effects		Wrap-up
16.00	Day wrap-up and questions				
16.30		Day wrap-up and questions	Day wrap-up and questions		
17.00					

The specific content can be adjusted in case customer staff have specific wishes.

This training should ideally take place early in the process, at around the time when customer engineers are expected to have first SDR hardware in their hand.

Contact

Please contact us at sales@gomspace.com if you want to know more about Software Defined Radio Training or have other requirements for assistance.