FPGA Stand Up

12 December 2023

Agenda

1) Round-table standup
2) over-the-air status for Haifuraiya
3) a how-to for bugs in petalinux
4) GPIO integration
5) ESA activity progress

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1) Round-table standup

2) over-the-air status for Haifuraiya - cyclic buffer push is working but is not flexible enough for 4-ary MFSK or anything else aside from 1024 by 1024 fixed buffers, non-cyclic buffer push has time gaps but this problem is addressed at EZ, adrv9009 profile loaded without fatal errors, and we have good clock management documentation.

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3) a how-to for bugs in petalinux has been published to our repository. We had an encounter with “active development” over the past week and learned several new ways of dealing with embedded linux development in a cross-platform environment. Everything has been published in “Working with FPGAs” in our Remote Labs documentation. Short answer - be prepared to take evasive action even in branches of code that seem stable. Learn how to “cherry pick” commits.

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4) GPIO integration

Manipulating GPIOS, whether to light up LEDs or sense something in the environment, are a “hello world” level hardware function. Dealing with GPIOs on our platform doesn’t have as straightforward a documentation or onboarding as other embedded platforms. There’s progress here, at least three methods of actuating GPIOs, and we expect to demonstrate control of this hardware next week.

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5) ESA activity progress

ORI is an AMSAT-CA GEO technical working group member.
AMSAT-DL is reviewing our technical support package.
JAMSAT is discussing involvement at the board level based on our inquiry.
AMSAT-UK indicated they would include our work in their proposal.
AMSAT-US/AMSAT-USA (-NA no longer applicable) has not responded.