As part of subproject B4 of the CRC 901 we investigate the application of the Proof-Carrying Code (PCC) principle to programmable hardware, specifically to field-programmable gate arrays (FPGAs). In this talk I will first briefly review FPGAs and current reconfigurable computers based on them. After presenting the PCC principle I will focus on the difference between hardware and software programming and discuss how PCC can be applied to hardware programming in form of Proof-Carrying Hardware (PCH). A particular problem hindering the application of previous PCH methods to commercial FPGAs is the proprietary and closed nature of FPGA binaries. To bridge the gap between recent PCH research, which relies on an abstract FPGA architecture, and commercial FPGAs I propose to use a virtualization layer on top of a commercial FPGA. This approach will leverage the ReconOS architecture to demonstrate PCH on a state-of-the-art FPGA system.