

# A logical framework to reason about Reo circuits

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Critical systems require high reliability and are present in many applications. Standard software engineering techniques are not sufficient to ensure that there are no unacceptable failures and/or critical requirements are fulfilled. The verification and certification of systems still present challenges and, in this context, Reo is a language tailored to simplify the modeling of the connection of components. This talk intends to present some efforts on the construction of a logical framework to certificate and reason about Reo circuits. The approach adopted consists of the construction of tools that translate these languages into formal models for tools that automate the verification and validation of the models. In this framework, it is included a compiler using the Coq framework, the translation to a model checker and initial studies on the combination with dynamic logics to develop a native proof theory.