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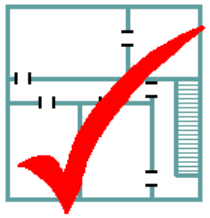


Autohan and Oxygen using Pebbles

Avoiding Feature Interaction

Funded partly by the CMI Cambridge MIT Institute
3 Year Project, Started October 2003.

API Reflection

o Many devices can now provide reflection of their API. This allows them to describe their passive properties and command interface to allow remote RPC or rendering of a graphic UI.

o We are investigating HLL and UML extensions to support system design and software enginering aspects when reflective APIs are present. It is quite a change from traditional compile/execute flows and raises a fundamental tension between compile time checking and runtime flexilibitly.

o API reflection techniques are, however, fairly stable: there exists XML RPC, WSDL and UPnP to name a few standards.

Code Reflection ?

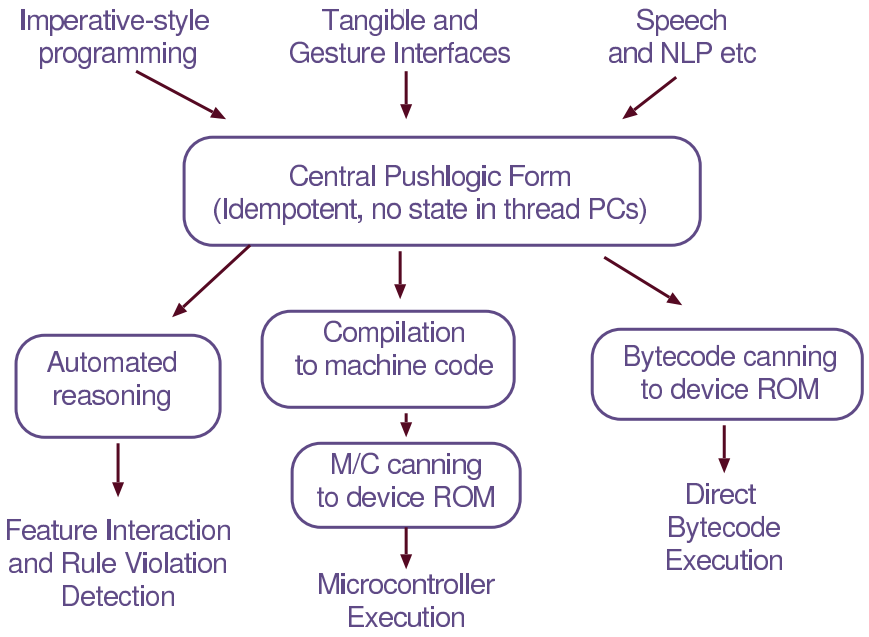
o Code Reflection of top-level embedded applications allows us to reason about how devices will interact.

o Devices must reflect (publish) their application scripts or a summary of them.

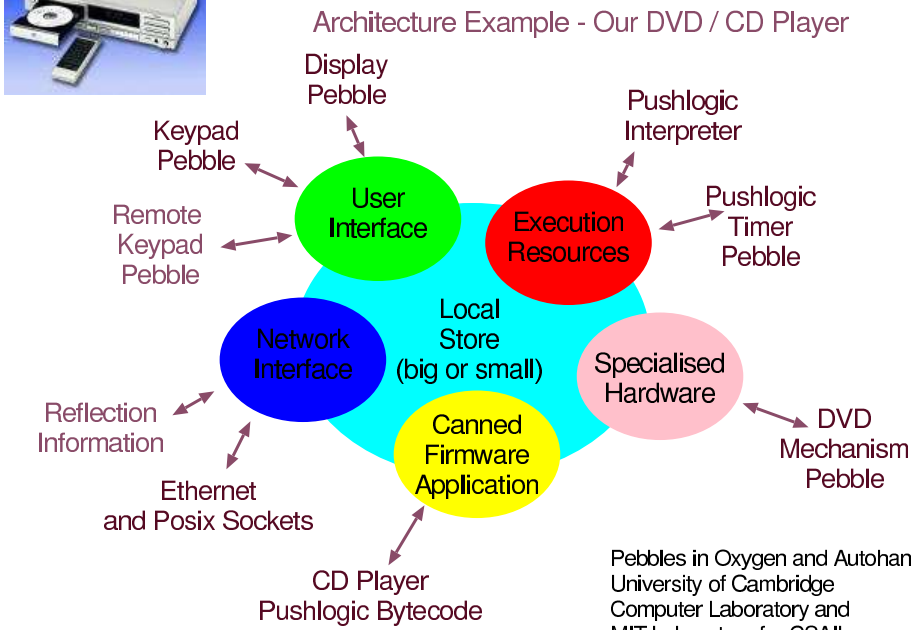
o Proof carrying code is one approach. We are instead exploring the use of code that is amenable to automated reasoning, including idempotent, stateless and declarative intermediate forms.

o Our current experimental scriping form is called 'Pushlogic'

Application Scripting Tool Flow



Device Componentisation into Pebbles



Pebbles in Oxygen and Autohan Project
University of Cambridge
Computer Laboratory and
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