# PANEL SESSION – Architectures and Integration for Programmable SoC's

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With the increasing complexity of designs the requirement for flexibility is also growing. This adds the aspect of programmability to SoC designs. A typical SoC decomposes a system into components which are individually specified. These components are in a pre-existing form that satisfies the specification or are custom-made. With the needed flexibility the decision for components to be hardwired, programmable, or software-based need to be pushed to the end of the design phase. The most desirable situation is that the composition of these components results in the expected system behaviour. The rule, however, is that significant system integration effort is required to make the composition of components operate as intended. To a large extent, this is because of cross-cutting concerns that result from parafunctional characteristics often associated with the integration platform. Ideally, components should be composable (i.e., their properties should not change when connected to other components) and the system should be compositional (i.e., emergent system properties should be derivable from the component properties). Reality is far removed from this situation.

Possible questions to the panel are… What is the right language for the development? Why is the integration so difficult? What do we need to do to remedy this? What do we need to do to support the architect's vision? How should we describe systems so they can be more easily built in today's systems-of-systems world? If we need to generate tests from specifications, what form should they be in? Why hasn't the concept of an executable specification caught on?

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