

Viewpoints of DSP Software and Service Architectures

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ABSTRACT

The software architecture of a future mobile telecommunication system consists of three main parts: system infrastructure services, middleware services and application services. Infrastructure services provide access technologies and networking services for the middleware services that again provide richer capabilities for wireless applications through mobile Internet. Architecture describes the organization of software systems, components, their internal relationships and connections to the environment. Reusing architectural structures benefits companies, because the architecture is a pivotal part of any system, and a costly one to construct. Architecture is documented and reused through architectural views that describe identified stakeholders and concerns, e.g. the purpose of a system, and the feasibility of constructing, deploying, evolving and maintaining it. Views conform to special viewpoints defined for the domain. This paper describes the viewpoints selected for developing the architecture of middleware services and digital signal processing software and provides a general framework for comparing viewpoints. Comparison and analysis of the defined viewpoints show that domain and system size are the dominant issues to be considered when architectural viewpoints are being selected.

Keywords: Software architecture, architectural view, architectural viewpoint, service architecture, DSP