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Extended call control telecommunications web service

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Abstract

Internet based call control Web services enable telecommunications network operators to offer Web developers a simplified method of controlling telecommunication resources. Web Services that expose telecommunication networks to third parties are highly abstracted. This abstraction allows Web developers to create applications that provide call control functionality without detailed knowledge of the underlying network. Functionality offered by network operators is usually of a simple nature, and does not provide developers with advanced call control functionality, similar to that found in operator services.

Advanced call control requires the Web application to have detailed knowledge of the state of the telecommunication resources. In this research an Extended Call Control call model and Extended Call Control Web service are developed and demonstrated to provide Web applications with this knowledge.

To develop the Extended Call Control call model existing telecommunication call models were analysed for components suitable for Web control. The Extended Call Control Web service was developed using advanced call control use cases. The proof of concept successfully demonstrates the use of the Extended Call Control Web service and the value of the Extended Call Control call model in proving asynchronous Web based advanced call control of telecommunications resources.

This research has developed a novel call model for Web based call control of telecommunications networks. The Extended Call Control call model and API fulfils a fundamental requirement for Web based advanced call control, namely knowledge of the state of the underlying network and asynchronous control of those resources. This research facilitates the development of advanced Web applications controlling telecommunications calls within the network which previously was limited by the knowledge of the network state. Telecommunication service applications can be moved from tightly coupled systems within the operators network to Web based applications within third party domains such as a Internet based virtual private branch exchange or call centre.