Poster on Accept Heterogeneity: An Event Monitoring Service for CORBA-based Heterogeneous Information Systems

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Today's distributed information systems often are collections of existing information sources and as such heterogeneous. Technical integration of heterogeneous sources is supported by CORBA [2]. However, CORBA provides very general support and does not take source specific semantics into account. This also applies to CORBA's Event Service. Our objective is to enhance CORBA by mechanisms that allow to add application semantics.

Our key idea is to provide a flexible *configurable* event monitoring service, which accepts heterogeneity, for a CORBA environment. Configurable means, that we are able to generate code templates at compile time and to provide dynamic parametrization of parts of the service. Event passing semantics follow as far as possible those developed for active database Event–Condition–Action (ECA) rules [1].

The monitoring service extends our work on ECA rule based active information delivery [4] in heterogeneous information systems. Our work adresses the following problems: description (and detection) of arbitrary event types from heterogeneous sources, utilization of source category specific implementation support for event monitoring, and examination of the supportable degree for parameters from ECA rules like event occurrence notification time (after, before, instead) or event–granularity (instance/set–oriented).

In our work on a monitoring service – for a complete description including a discussion on related work we refer to [3] – we achieved the following main results. We developed an IDL–based, configurable and extensible event type model for arbitrary sources. The model supports event type descriptions using either direct coded IDL event types or IDL as an event description language, or a (simple) meta-model (NV lists). Furthermore we provide the IDL specification of the service interfaces, which each monitored_object in the system has to implement. We contribute a classification scheme, which categorizes sources by their specific implementation support for monitoring (see fig. 1). More-
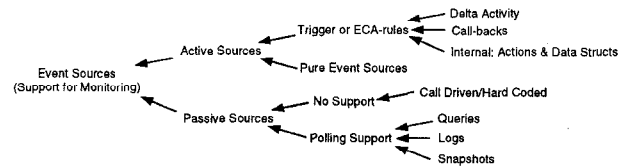

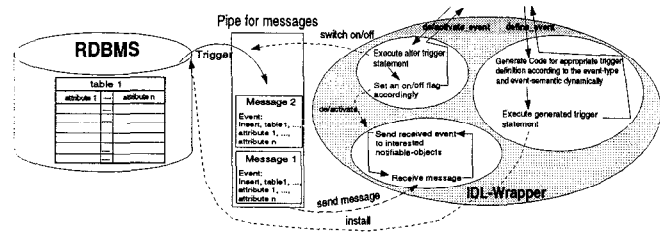**Figure 1. Classification: Monitoring Support**

Figure 2. Monitoring: Trigger and Call-backs

over, implementation techniques for monitoring sources from several of the categories are presented, providing compile time configurability by generation of technique specific code templates. Figure 2 shows an implementation example for a source with triggers and call-backs. Furthermore, we allow for *dynamic* specification of event types to be monitored (see fig. 2). Eventually, event semantics from ECA rule parameters that each of the techniques is able to support are discussed.

References

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[3] G. v. Bültzingsloewen, A. Koschel, and R. Kramer. Accept Heterogeneity: An Event Monitoring Service for CORBA-based Heterogeneous IS. FZI Report 9/96, Germany, 1996.

[4] G. v. Bültzingsloewen, A. Koschel, and R. Kramer. Active Information Delivery in a CORBA-based Distributed IS. In K. Aberer and A. Helal, editors, *1st IFCIS CoopIS*. IEEE CS Press, 1996.

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