

## Coordination and Awareness Support for Adaptive CSCW Sessions

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### Abstract

*In this paper we discuss the principles, design options and implementation issues to support coordination and awareness services in the context of adaptive CSCW sessions.*

*We analyze essential differences between the coordination support needed by these sessions when compared with the conventional coordination activity within workflow systems. Then we propose a flexible support model, which is more adequate for group-oriented collaborative work tasks developed in the context of a more complex workgroup activity.*

*The support is concerned with a set of adaptable mechanisms as well as system base components and services provided by an integrated, open and extensible support platform. These components implement a set of facilities for coordination and awareness control in the context of collaboration sessions.*

**Keywords:** *CSCW/Groupware, Coordination, Awareness, Large Scale Distributed Systems, Object Oriented Programming.*

### 1. Introduction

There are different definitions and characterizations that can be used to refer the coordination control activity. Different formalizations of the term "coordination", directly or indirectly applied to CSCW systems, can be found in different authors [Malone90],[Holt88],[Wino86]. In the perspective of this paper we define *coordination* as the support for the activity of managing dependencies and possible conflicts between collaborative entities involved in common and inter-related tasks of a collaborative activity.

These entities are different when regarded at different levels of a computational system. At application-level entities are associated with users participating in a workgroup and interacting in the context of collaborative work sessions, represented by specific applications. At system-level, entities are associated with the different instances of computational processes running in a shared system-level coordination context implementing the notion of a collaboration workspace. The processes are associated with collaboration-aware applications adopted by the users when they interact with that workspace.

In the CSCW literature, the *coordination support* is referred with different perspectives and focus. In the case of specific computational system supports we can distinguish between two fundamental approaches: the approach of the coordination support provided in the context of conventional workflow systems and the approach related with the coordination issues in group-oriented collaboration-aware applications and systems.

In both cases we recognize the same base coordination principles as discussed by Malone and Crowstoun [Malone94]. However, the essence, focus and emphasis of coordination control activities in both cases have important contextual differences. These differences relate with different requirements and design principles of the coordination support in the two approaches.

Starting from the proposed definition of coordination and analyzing the properties provoking potential dependencies and/or conflicts, we observe that the coordination and its support in the case of classical workflow management systems and in the case of collaboration oriented workgroup sessions is essentially different. In each