

2.4 Collaboration

Our society increasingly relies on geographically distributed collaborations for human

A collaborative scientific environment might include a large number of small sensors and robots with varying capabilities, capable of being embedded into the natural environment with minimum disturbance. Low-power nodes, with limited communication bandwidth, need to understand local conditions and together collaborate to identify and monitor global environmental conditions. Network traffic loads may be reduced if data and information can be aggregated and correlated at a local site to the level of granularity required by the collaborators.

2.4.2 Collaboration Scenario Networking Needs That Require Networking Research

To support collaboration environments in the future, networks will have to provide:

New middleware services



Virtual meeting maker

The system must be able to schedule, establish, and record virtual meetings. It must support schedule conflict resolution, scribing, attendance authentication, and archiving. In addition, the system must support asynchronous access and coordination for meeting absentees who access archived meeting materials.

Security and privacy

Security and privacy tools must be able to handle a wide range of requirements such as authorization, end-to-end key management, and revocation of authorization. In addition, the system must be able to support advanced security features such as allowing selective anonymous collaborators to participate and retrospectively access archived collaboration materials.

Other features

The system will also need to support a variety of additional capabilities such as shared and private workspaces, an “electronic whisper” capability that allows two collaborators to hold a private conversation during a collaboration session, and language translation.