A Network-Centric Design for Relationship-Based Rights Management

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Networked environments such as the Internet provide a new platform for communication and information access. In this thesis, we address the question of how to articulate and enforce boundaries of control on top of this platform, while enabling collaboration and sharing in a peer-to-peer environment.

We develop the concepts and technologies for a new Internet service layer, called FIRM, that enables structured rights/relationship management. Using a prototype implementation, RManage, we show how FIRM makes it possible to unify rights/relationship management from a user-centered perspective and to support full end-to-end integration of shared control state in network services and users' client applications.

We present a network-centric architecture for managing control information, which generalizes previous, client/server-based models to a peer-to-peer environment. Principles and concepts from contract law are used to identify a generic way of representing the shared structure of different kinds of relationships.

Full text of dissertation in PDF, in Postscript, in compressed Postscript

Related Papers and Presentations

  [Describes how, at a systems level, the FIRM architecture defines an "open standards"-based rights management service layer for the Internet.]

  [Survey of service layers developed as part of the Stanford DL project.]
  [Slides of a 60-min talk. Watch it via VXtreme video streaming]

  [A brief survey article about RManage focusing on its integration into the digital library project.]

  [These two sets of slides describes an initial cut at the user's view of the underlying RManage infrastructure. Contains screen-shots from earlier versions of the prototype.]

  [An early outline of the prototype infrastructure. Not public.]

  [The slides from a presentation given at CFP96 that outlined some general ideas related to creating a market of personal information. For updated descriptions that reflect the current state of my thinking, please see the more recent papers.]

  [Introduces the communication agreement framework at a conceptual level.]

  [Proposes a generalization of public-key certificates which more appropriately deals with issues related to personal information certification. My view has now moved on to the belief that there needs to be a separate protocol layer that deals with the articulation issues independently of any public-key structures.]


[This work details concepts and protocols of a meta-information protocol and applies it to annotations for Web documents; a variant of this combined with the DL interop protocol (on the retrieval side) is the base of the certification protocol which we are using for certification/credentials as part of the commpact framework.]


[The general notions of "collector" and "notifier" of this work are used in the commpact framework to deal with many user interface issues.]

Of Related Interest

See FindLaw's pages on Intellectual Property, Contracts, and Cyberspace law.

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