Proximity Networking

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What is a Proximity Network?

Networks where the physical proximity of a user to a network makes **immediately** available a local service environment
Why a Proximity Network?

Drivers:
• Ubiquitous computing
• Ubiquitous communications
• Everyday applications

Proximity Network:
Promote simple integration of client devices into a Networked Services environment
Proximity

Why is “Proximity” interesting
• Paradigm for interaction with physical world

There are different scales of Proximity

Our approach
• Link Layer Proximity by default
• Augment it with Location Service
Components of the Proximity Network Architecture

Client Device
- Proximity Manager
- Negotiation Agent
- Configuration Client(s)
- Client Authentication Module(s)
- Service Discovery
- Service Advertising
- Proximity Detector

Proximity Network
- Configuration Server
- Policy Server
- Service Authentication Module(s)
- Service Access Control Manager
- PEPs
- PDPs
- Service Access Control Table
- Service Directory
- Negotiation Agent

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Sample Execution of Skeletal Prototype
Entering a New Proximity

Proximity Detector

Proximity Manager

Client

Proximity Network

SLP

ACAP
Client Learns About Local Environment and Services

You are entering a new environment

WELCOME TO USC/ISI PCEN

The resources available are:

- Work Preference Tools
- Local Information Service
- Wide area resources and utilities
- Local Utilities

10th Floor Plan

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Future Work

• Location Services
• Automated Configuration
• Negotiation
• “Smart” Proximity Managers
• Personalization
• Architecture Implementation, Experimentation, and Evaluation