RTMonitor: Real-Time Data Monitoring Using Mobile Agent Technologies

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Physical Architecture of RTMonitor

- Information Server
- DB
- Base Station
- Control Points
- Switch Office
- Fixed Network
- Vehicle passing through control points
Two-level Graph Architecture

Local Graph of Region C

Virtual Paths of Region C

Global Graph of Whole Area
Query for Shortest-path

Merge the paths of Global Graph, P and Q
Working Models of COAgent

1. Dispatch
2. Update
3. Result

1. Issue Query
2. Initiates
3. Result
4. Result

GraphAgent at region 1
GraphAgent at region 2
GraphAgent at region 3
GraphAgent at region n

GraphMonitor 1
GraphMonitor 1
GraphMonitor 1

Between Sites
Between Mobile Clients

GraphAgent at region 1
Moving Object
Query Agent

GraphAgent at region 1

Between Sites
Between Mobile Clients
Adaptive Push Or Pull (APoP)

PUSH Mode

Server actively initiates Recomputation and Update from Server to Clients

Clients are adaptively allocated into either PUSH or PULL (APoP)

PUSH Group

PULL Mode

Client initiates Recomputation and Update from Server to Clients

PULL Group

APoP Algorithm