



# UBIQUEST : Declarative approach for integrated network and data management in wireless multi-hop networks

ANR Programme Blanc 2009

## Data intensive systems

- Devices with limited resources
- Distributed data (horizontal fragmentation)
- Multi-hop ad-hoc networks
- Complex programming (e.g. routing, data management)



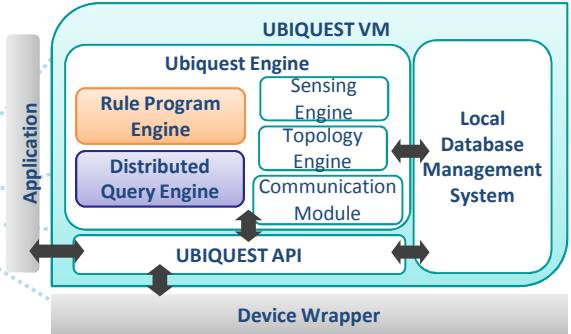
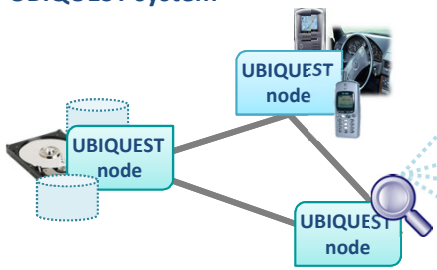
## UBIQUEST proposal

- Combining declarative networking and distributed data based management
- Declarative and adaptive approach
- Query optimization by learning
- A UBIQUEST Virtual Machine (VM) on each node



## UBIQUEST vision

### UBIQUEST system



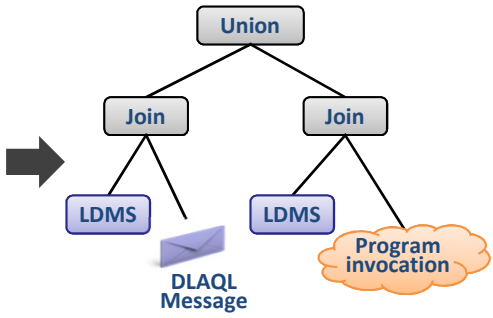
## Declarative and adaptive

### Query expression in DLAQL

```
SELECT Area, Avatar FROM Positions SCOPE IS SELF WHERE Area = 7
```

### Synthetic expression of routing program in NetLog and QuestLog

```
↓Route(@orig, dest, dest, 1) :- Link(orig, dest)
↑Route(@orig, dest, nh, l+1) :- ~Link(orig, dest),
Link(orig, nh), ?Route(@nh, dest, _, l)
```



**COORDINATEUR**  
Christine COLLET

**PARTENAIRES**  
Grenoble INP, INRIA, INSA Lyon

**CONTACT**  
ubiquet@imag.fr  
<http://ubiquet.imag.fr>