



Middleware to Support Sensor Network Applications

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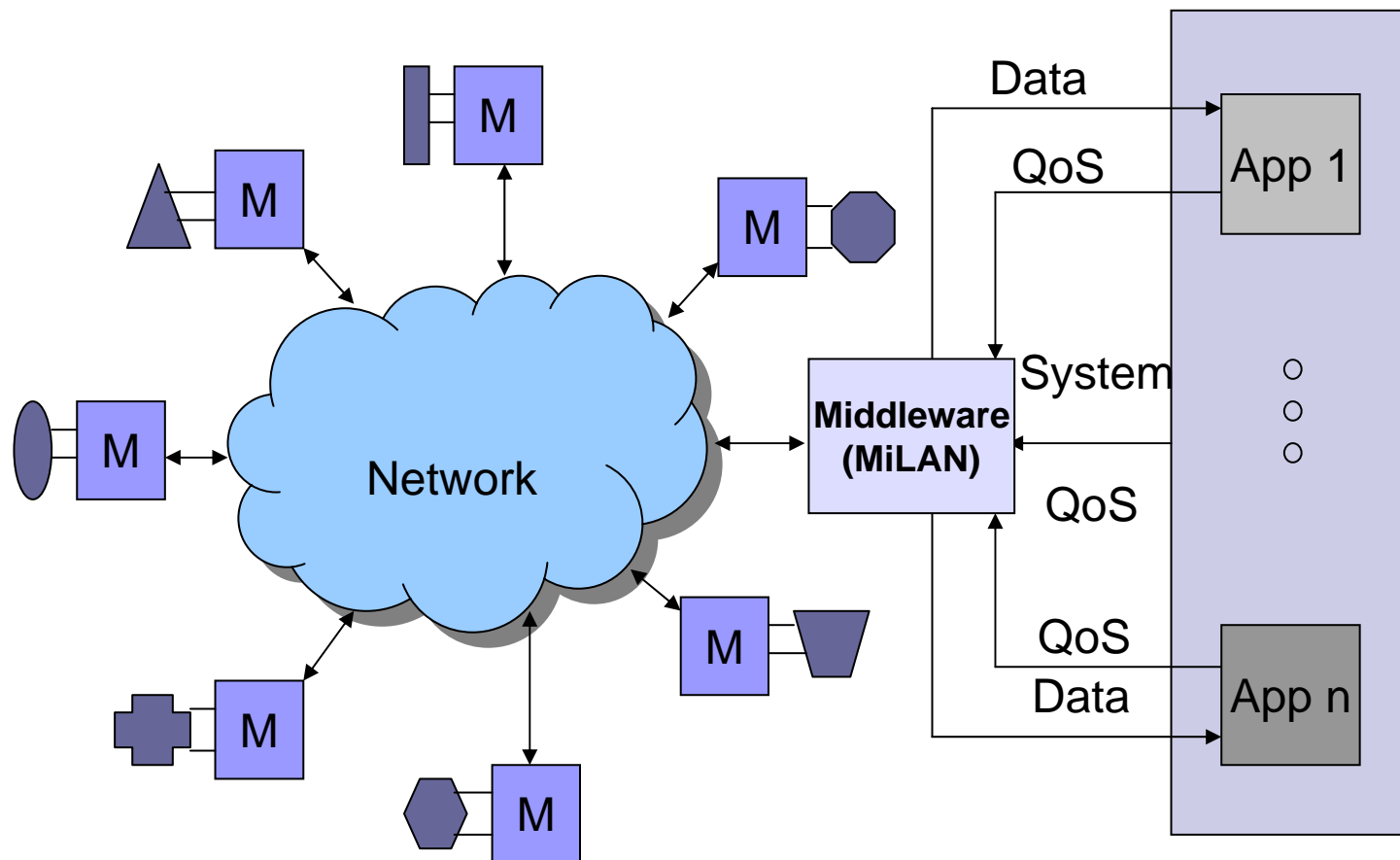
Plan



- Introduction
- Sensor Network Management
 - Problems
 - Existing solution
- Relation among different middleware
- MiLAN
- How MiLAN works?
- conclusion

Introduction

■ What is Sensor Network?



Sensor Network Management



■ Problems

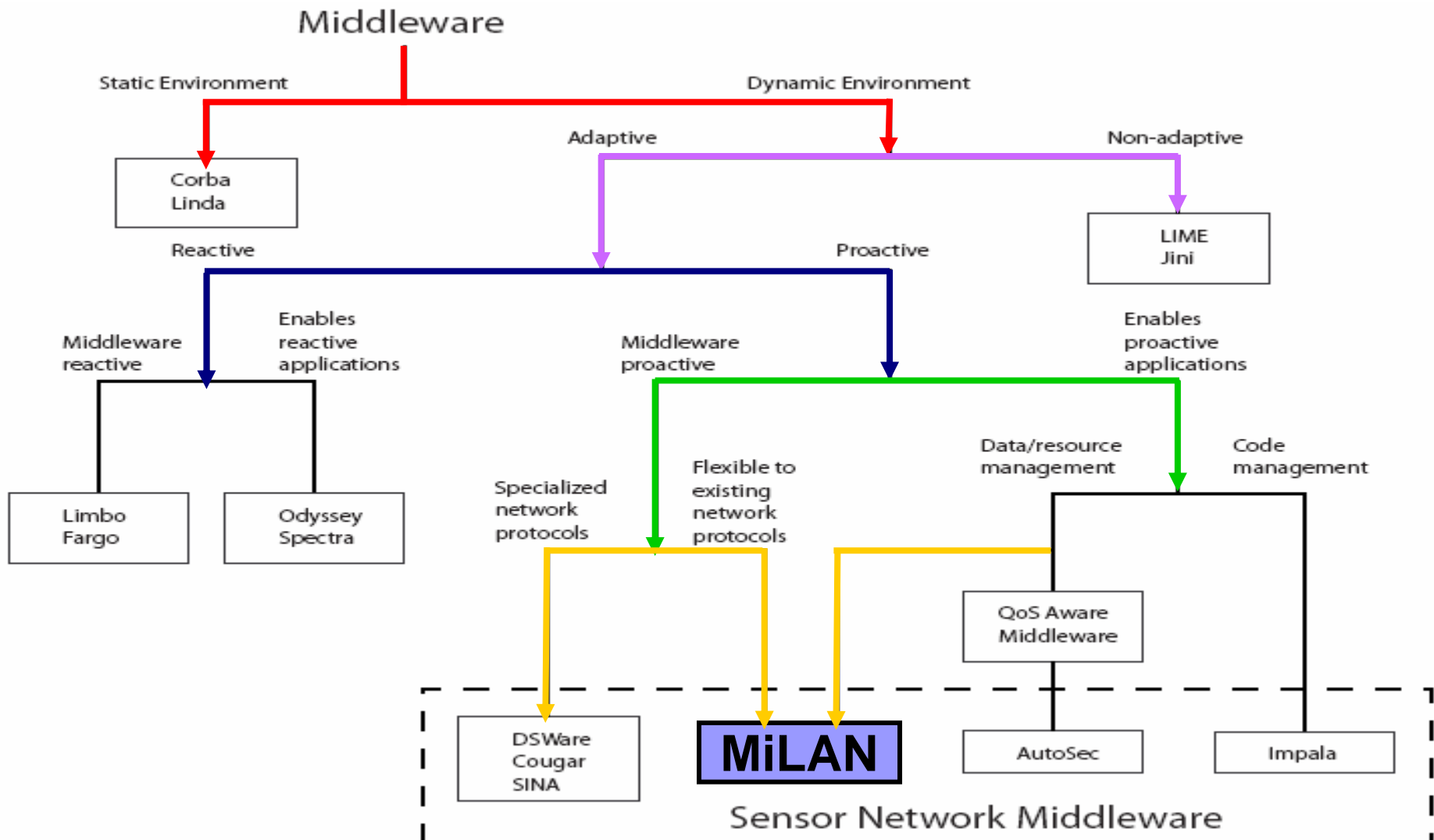
- Applications: they need a specific QoS
- Sensors:
 - Distributed
 - Energy limited
 - Channel Bandwidth

Sensor Network Management



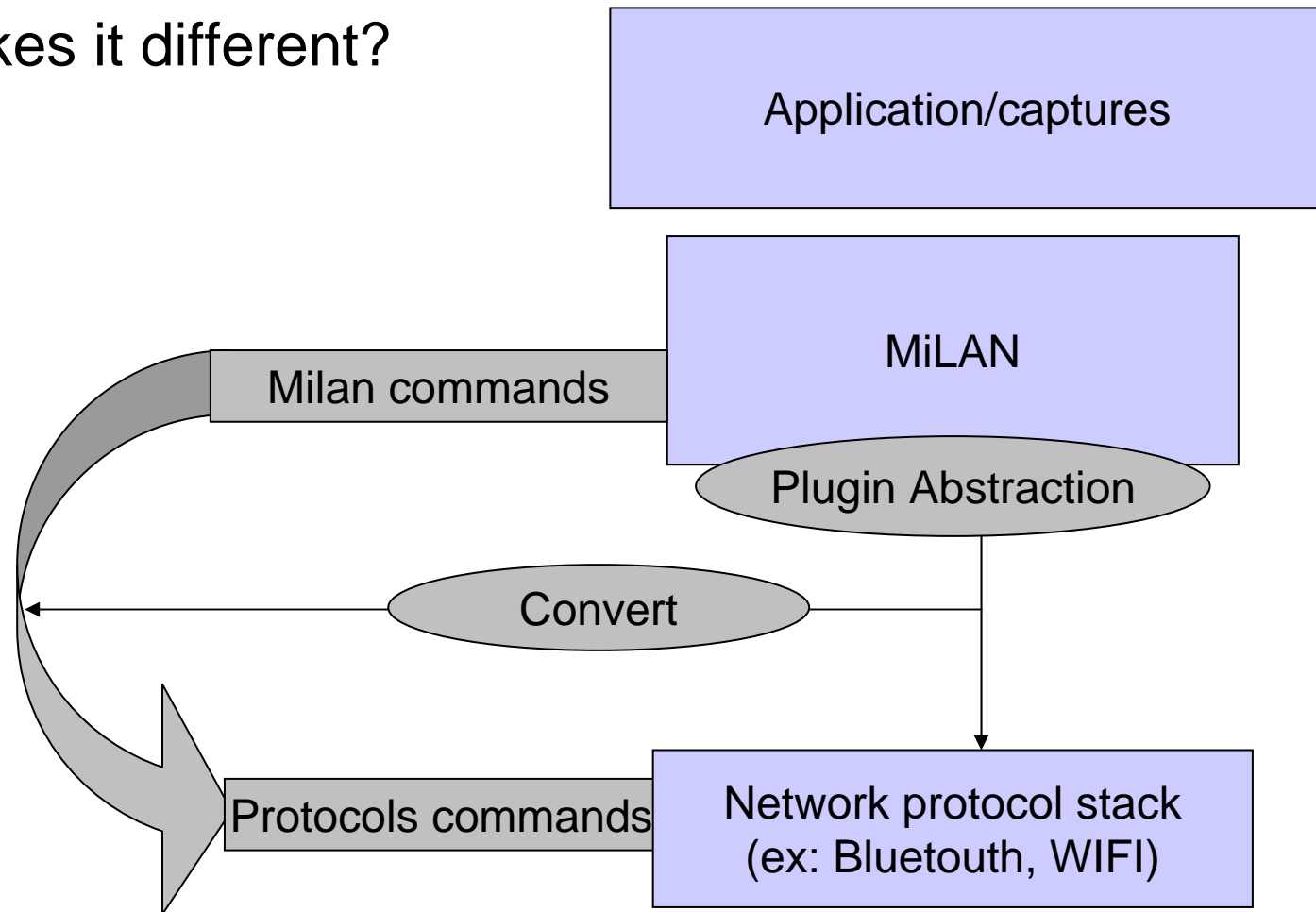
- Existing solution: protocols to extend network lifetime
 - Low-level node collaboration (LEACH, Directed Diffusion)
 - Turn nodes off whenever possible (PAMAS, S-MAC, ...)
 - Tailoring the routing protocols to the characteristics of sensor networks (Rumor Routing, SPIN)

Relation among different middleware

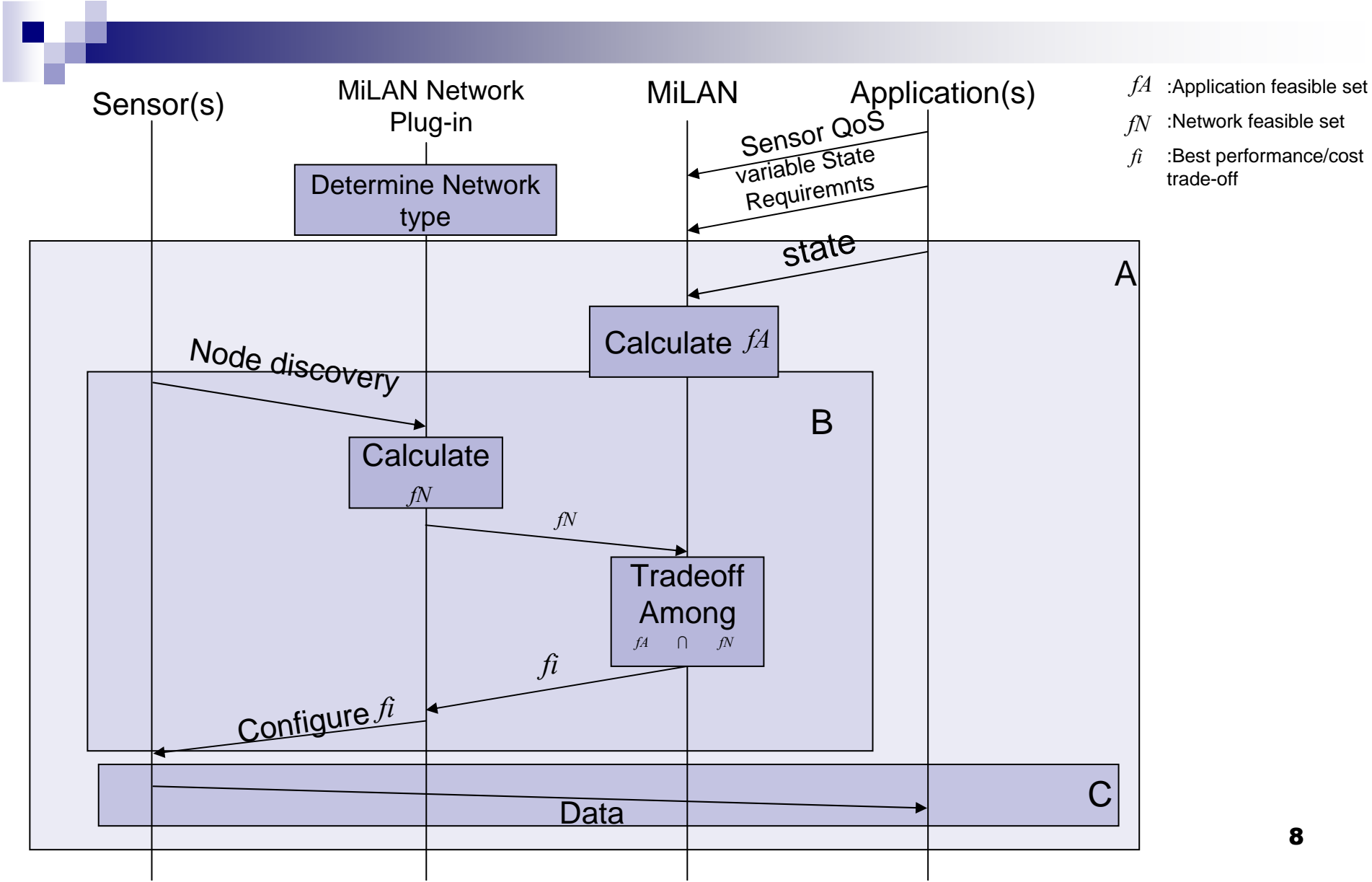


MILAN (Middleware Linking Application & Networks)

What makes it different?



How MiLAN works?



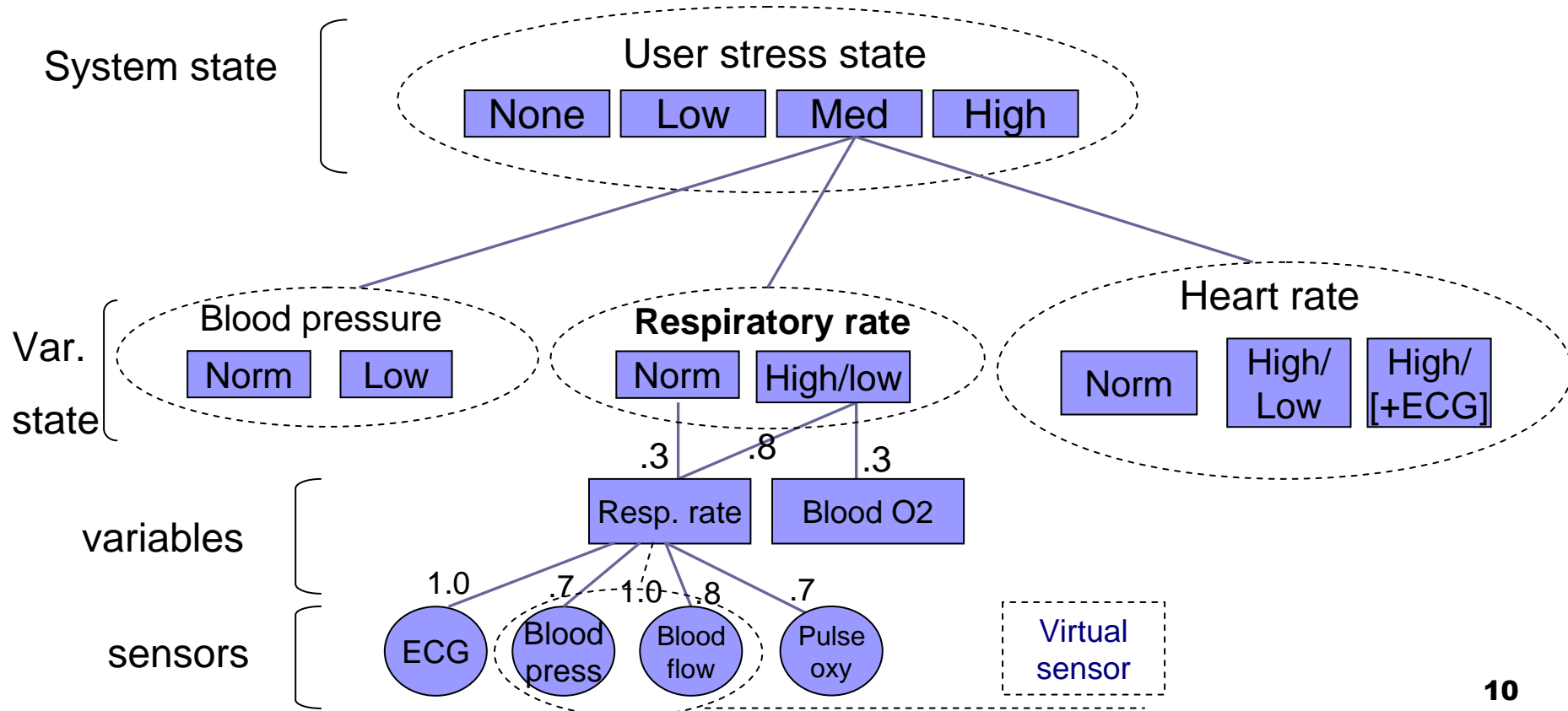
Scope of MiLAN applications



- Environmental surveillance
- Home/Office security
- Medical Monitoring

Example about the utilization of MiLAN

- Sensor-based personal health monitor



Conclusion



- Middleware eases the application development task in complex environment.
- The needs of the application should be integrated with the management of the network in a single middleware system
- Trade the application performance for network cost

Personal critics...



- The article doesn't discuss the pervasive environment...
- Lack of a case study about MiLAN's application

For more informations



- MiLAN Project:

<http://www.futurehealth.rochester.edu/milan/>