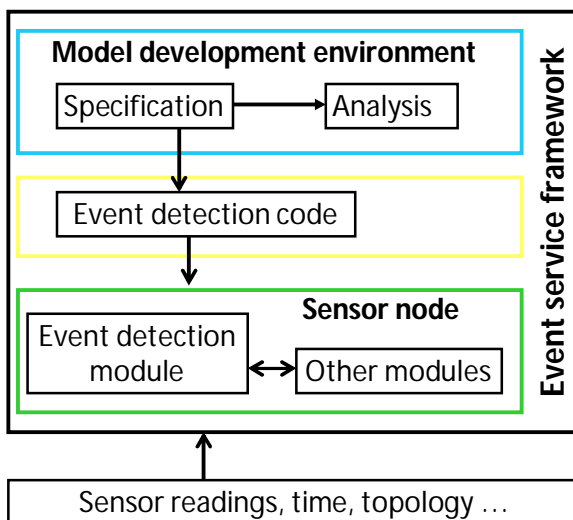


# Event Detection in Wireless Sensor Networks

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## Robust Real Time Event services



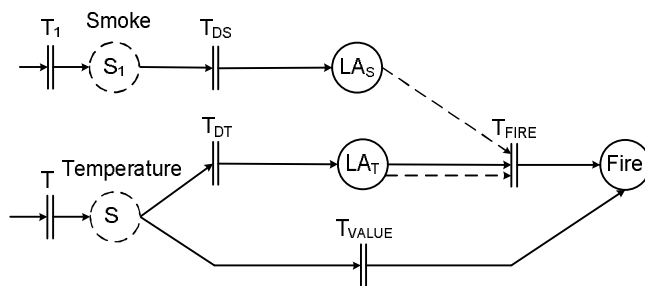
- To provide robust real time WSN event detection we need to:
1. Support the specification of complex events
  2. Facilitate the translation from specification to code
  3. Actively react to the impreciseness of sensor readings
  4. Develop robust event services to provide accurate event detection.

## Event specification

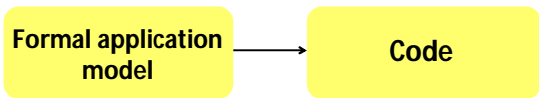
**MEDAL**

Adding WSN-specific features to **Petri nets** will allow us to describe complex sensor network events:

1. **Communication;**
2. **Action and conditional events;**
3. **Timeliness;**
4. **Sophisticated probability support**
5. **Collaborative decision making**



## Specification transformation



**Automatic code generation**

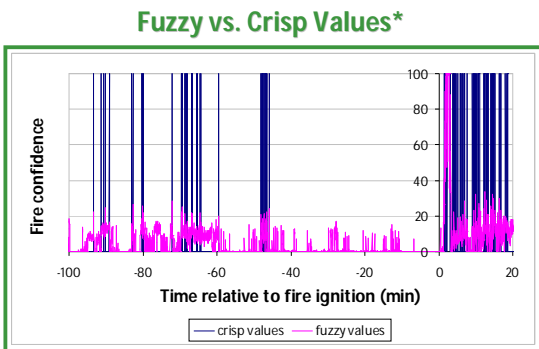
Automatically generating executables based on the formal MEDAL model of an application will:

- Ease the burden on the programmer
- Decrease the cost of code development
- Improve code correctness
- The code is generated from a formal model
- Automatic code generation could help avoid coding errors

## Event Detection

Using **fuzzy logic** could improve the accuracy of event detection:

- fewer false positives
- fewer false negatives



\* Burning mattress data from NIST