



# Formal Verification of Data-Intensive Applications

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# DICE Mission and Partners



*Mission:* support SMEs in developing high-quality cloud-based data-intensive applications (DIAs)

- ICT 9 Call/2014 – Software engineering
- 9 partners (Academia & SMEs), 7 EU countries



Imperial College  
London



Universidad  
Zaragoza



NETFECTIVE  
Creative Technology

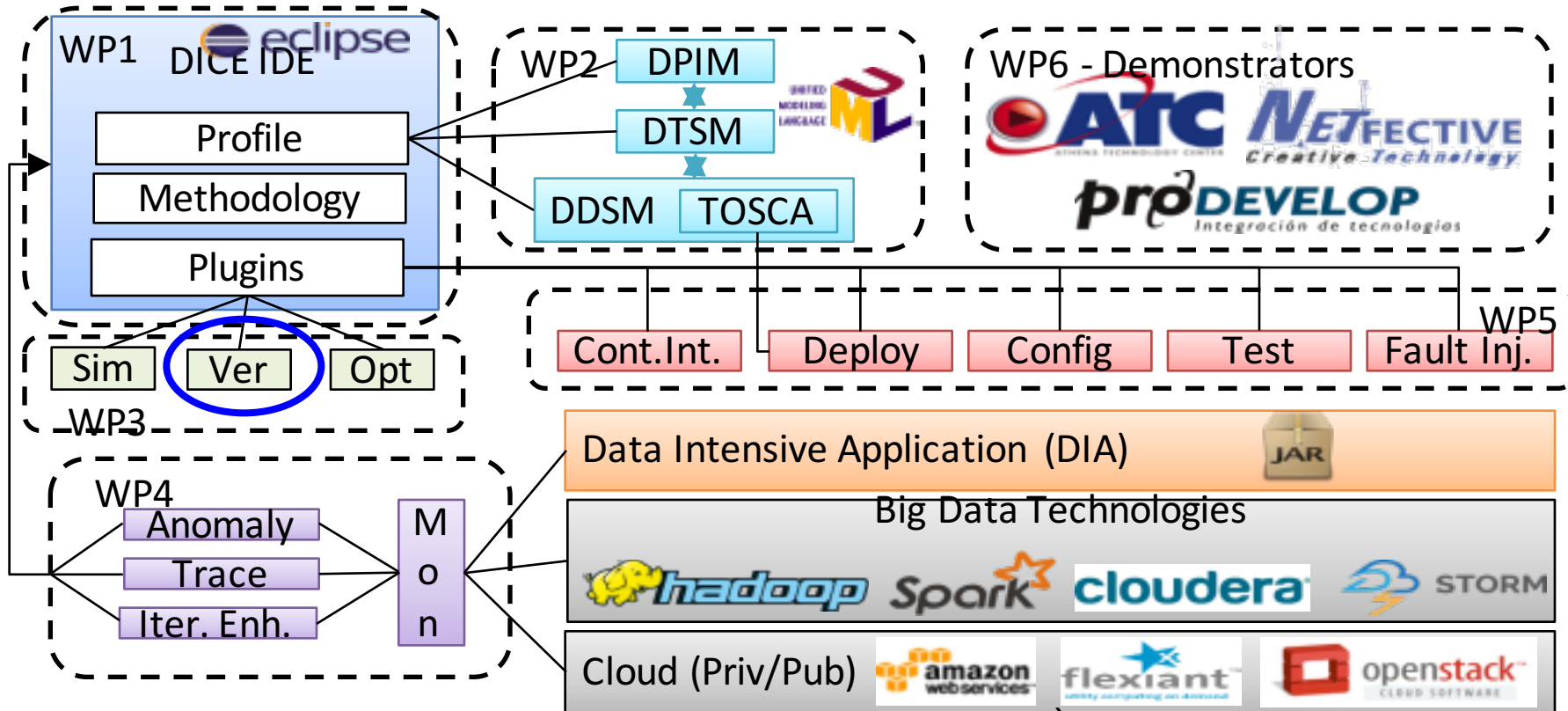


POLITECNICO  
DI MILANO

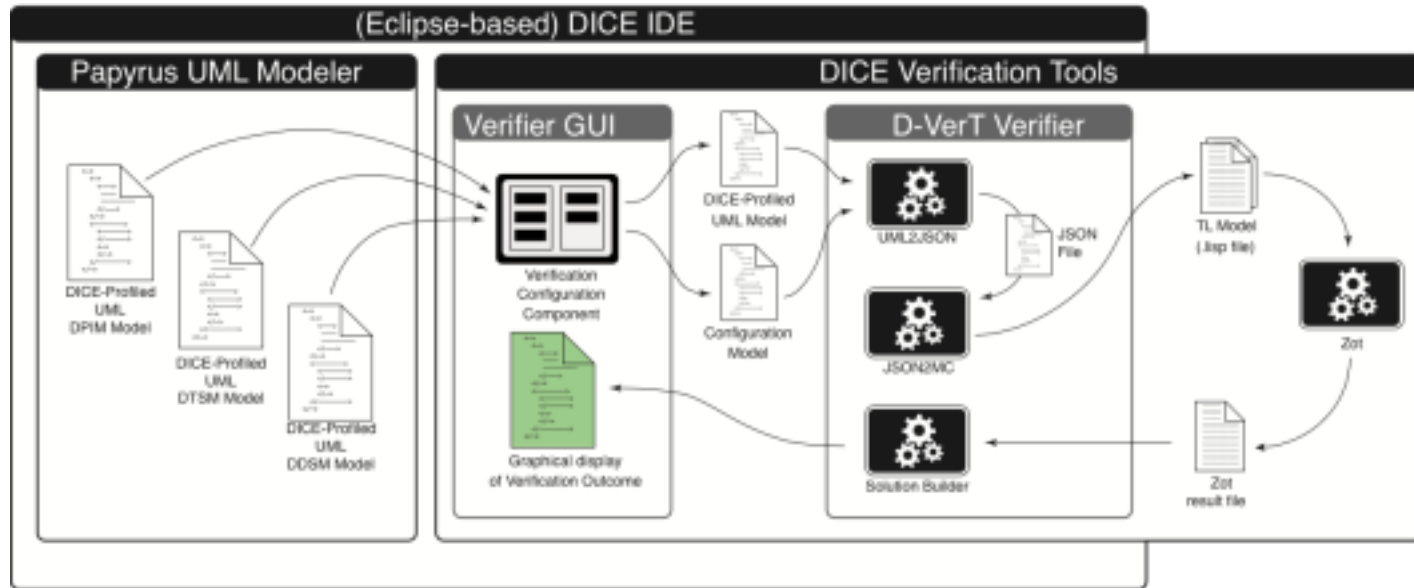
proDEVELOP  
Integración de tecnologías



# DICE Framework



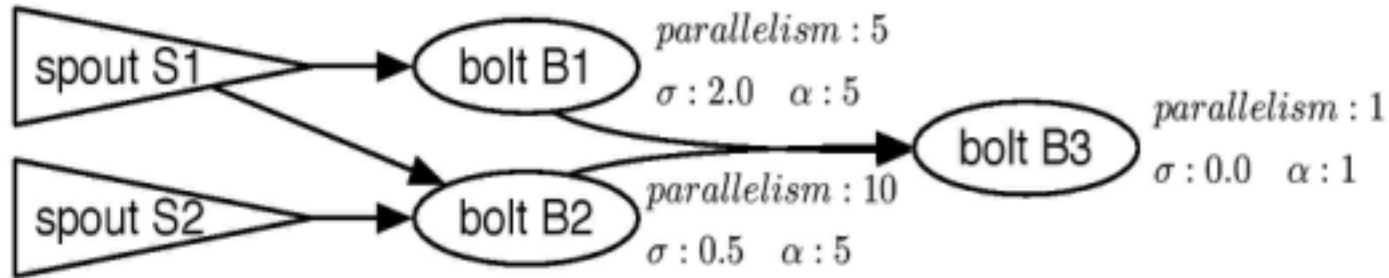
# D-VerT tool overview



*Property checked:* the system can manage the messages

- Without saturating the message broker
- According to specific timing constraints

# Toy example



**Problem:** Check that the queues associated with each bolt do not exceed a certain threshold in a certain timeframe.

# (some) Next steps



- Tackle decidability issues
  - extend the range of properties that can be checked
- Extension to other technologies
  - e.g., Spark Streaming, CEP