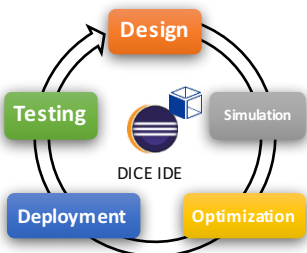


At a glance



The focus of the DICE project is to define a **quality-driven framework** for developing **data-intensive applications** hosted in private or public clouds. DICE will offer a novel **UML profile** and tools for **data-aware quality-driven development**.

9 European universities and SMEs

13 tools developed

Native support for:

- Apache Hadoop, Storm, Spark, Cassandra
- MongoDB

3 Industrial case studies



Iterative quality enhancement



Model-based development



DevOps methods for deployment and testing



Helps to reduce Time-to-Market



Cloud-oriented



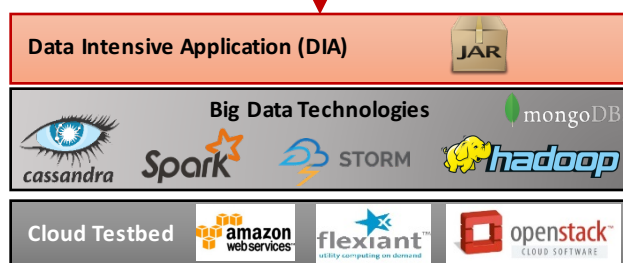
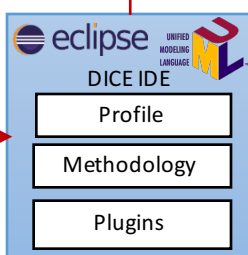
Open Source



DICE Tools

UML-based Model-Driven Engineering (DESIGN TIME)	
UML profile	Application models (DICE UML profile)
DICER	Deployment modelling and infrastructure management support

Continuous Delivery & Testing (RUNTIME)	
Delivery tool	Continuously deploy application in the testbed
Configuration Optimisation	Automatically tune application configuration parameters for best performance
Quality Testing	Automate application performance testing process
Fault Injection	Simulate Cloud infrastructure faults to test the resilience of the application



Quality Analysis (DESIGN TIME)	
Simulation Tool	Simulate application behaviour to predict its performance and reliability
Verification Tool	Evaluate application design against user-defined properties
Optimisation Tool	Optimise cluster configuration for application deployment

Feedback & Iterative enhancement (RUNTIME)	
Monitoring Tool	Collect, store, index and visualise monitoring data in real-time
Anomaly Detection Tool	Detect application performance anomalies
Trace Checking Tool	Analyse the application processes for the adherence to pre-defined properties.
Enhancement Tool	Feed runtime analysis results to the developer and design time tools