Cyclone
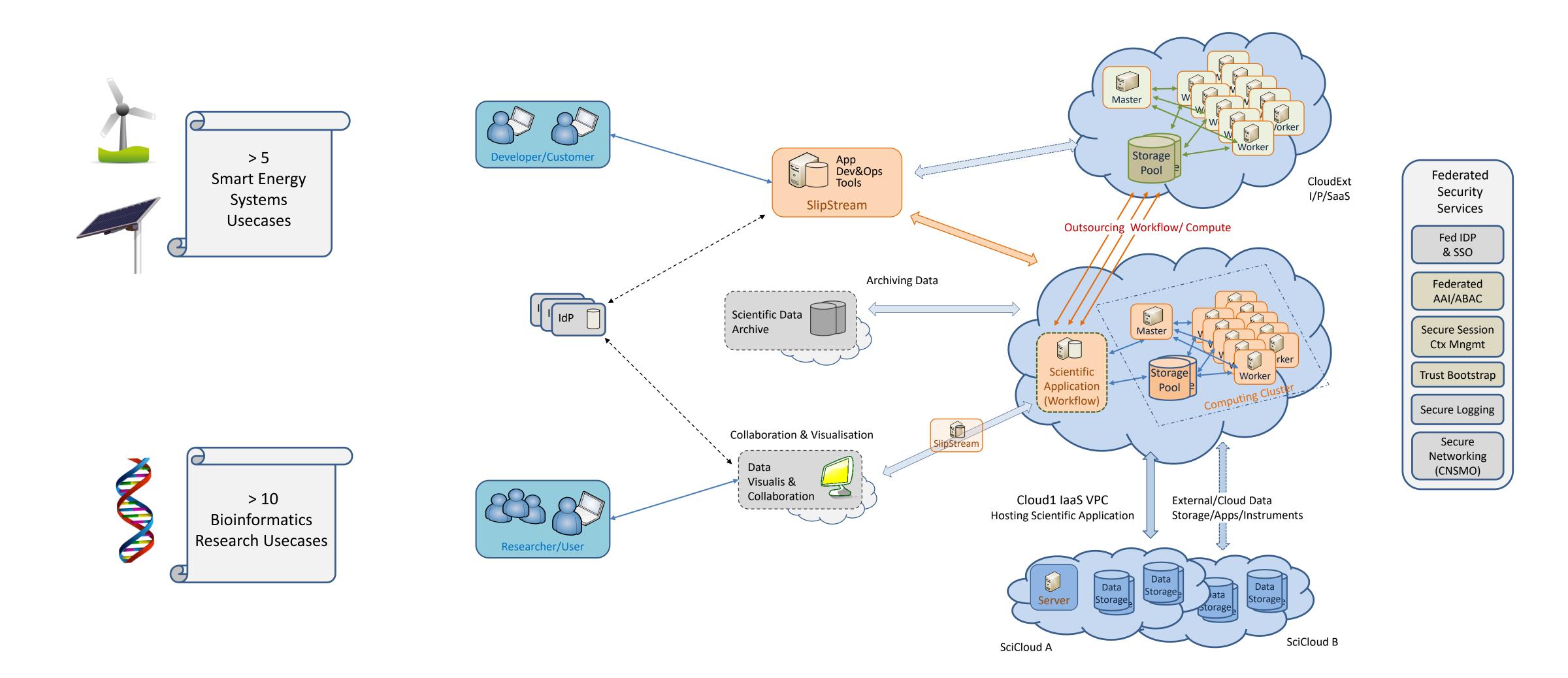
CYCLONE: Multi-cloud applications deployment and management platform for research and academic community

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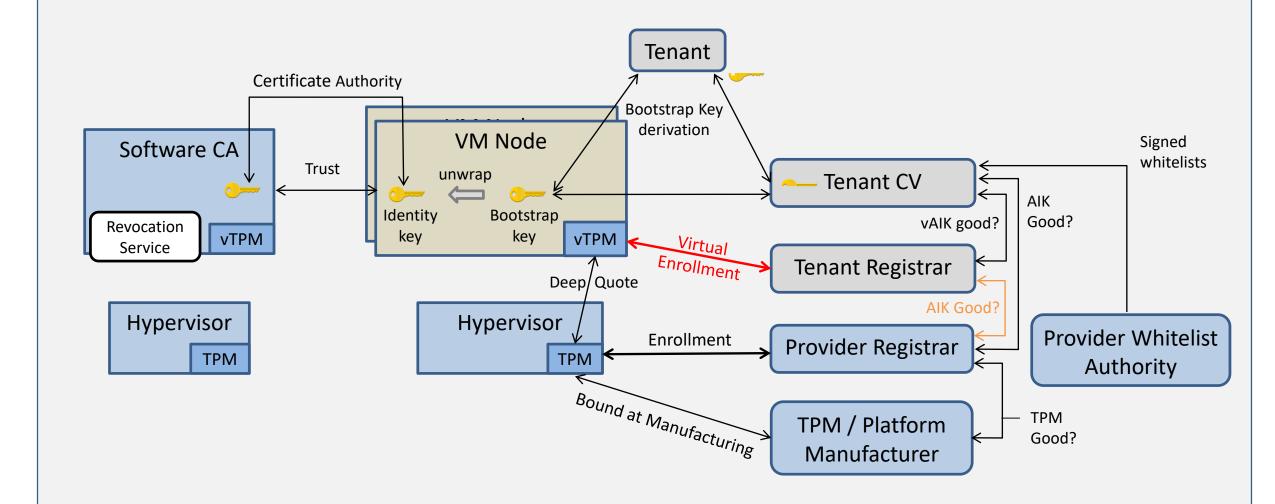
CYCLONE as a Secure Multi-cloud Infrastructure for Data Intensive Applications

CYCLONE Security Features

✓ Infrastructure for **consistent access control**, security credentials and context management for multi-cloud applications.

✓ **Federated identity management** for users or applications on their behalf when regulating access to sensitive resources.

✓ **Federated access control** management in multi-provider and multi-tenant settings.

✓ Implementation of **shared responsibility model** to support different types of multi-cloud application deployment paradigms.

✓ **Data protection in all phases of data handling lifecycle**; at-rest, on-the-move and during-processing.

✓ **Bootstrapping of trust** on dynamically provisioned cloud resources.

✓ **Security Service Lifecycle Management** from registration, deployment to decommissioning of security services.

✓ Ensuring **compliance** at the EU and international levels for security.

CYCLONE Security Infrastructure employs (among others):
- eXtensible Access Control Markup Language (authorizations)
- Keycloak (federated IDM)
- Kibana/Logstash (distributed logging)
- TPM (cryptography)

Bootstrapping Trust and Integrity Checks

- Trust bootstrapping enables the installation of keys to cloud nodes, applications and services during their initialization.
- Cyclone implements a trust bootstrapping mechanism similar to keylime [1].

References

[1] Nabil Schear, Patrick T. Cable II, Thomas M. Moyer, Bryan Richard, Robert Rudd: Bootstrapping and maintaining trust in the cloud. ACSAC 2016: 65-77

For more information refer to
CYCLONE website - http://www.cyclone-project.eu/
CYCLONE github - https://github.com/cyclone-project

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