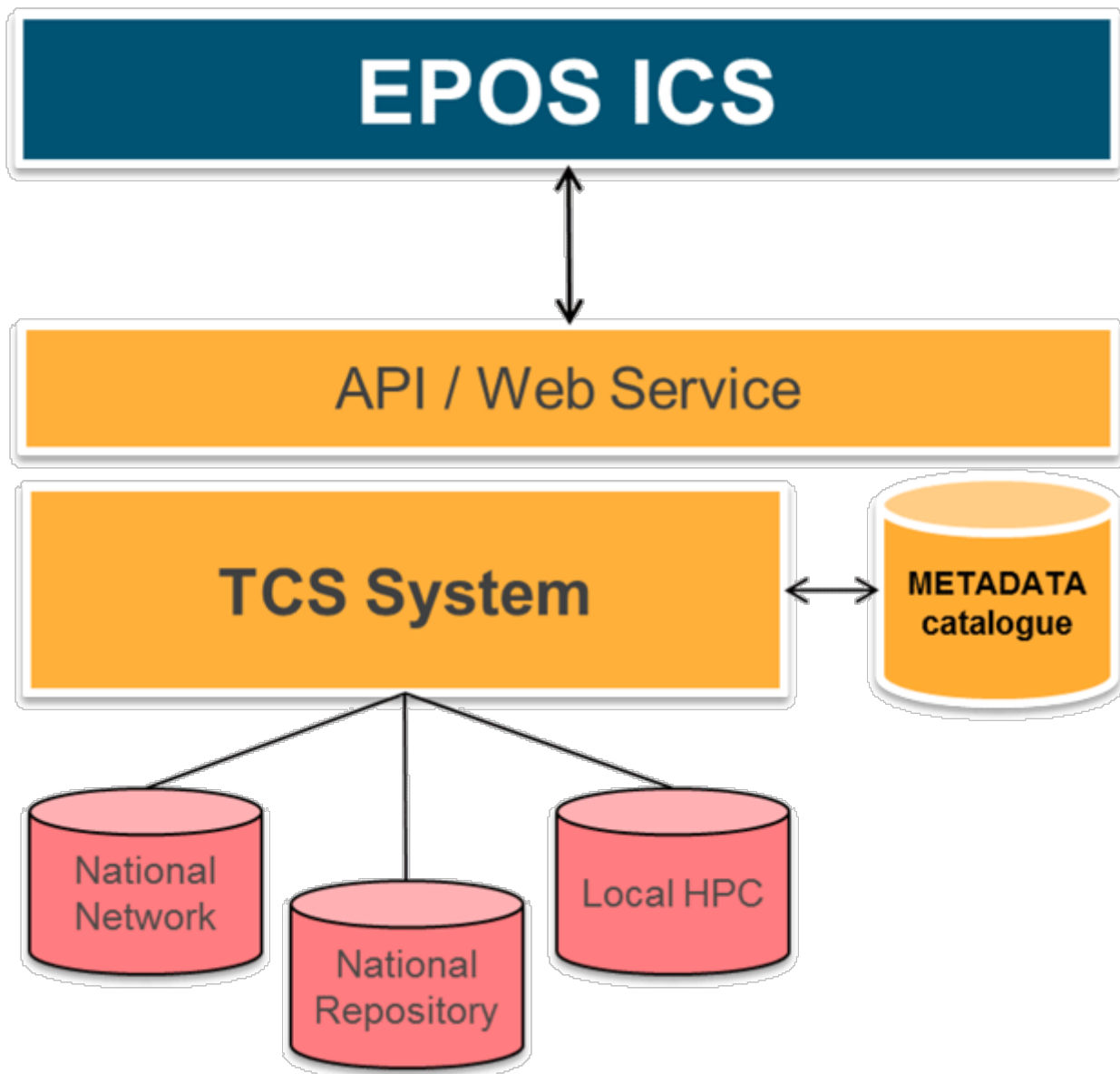


TCS IT-Architecture

The different Thematic Core Services (TCS) have varying degrees of maturity in their development. Therefore, it is not possible to deal with TCS as if they are all equal and homogeneous. Some TCS have a very specific services architecture based on years of experience in that specific domain. Other TCS don't have any history of developing services. Some TCS rely on a federated architecture, others on a single sited data centre.



Generic TCS architecture. Independently of the community technical choices to federate and make the data accessible, all TCSs should have web services / APIs which enable ICS to access the data.

Some [TCS](#) have already done the effort of defining metadata standards and web services to disseminate the data. Others are still in the process of undertaking such work.

As a consequence the scenario is very heterogeneous and includes many services with different levels of “technical” maturity.

Nevertheless, it is still possible to define a very generic architecture which, independent of the [TCS](#) level of maturity, can be applicable to any [TCS](#).

The architecture is very “general purpose”, simple, and presents the following elements:

- *National Layer Research Infrastructures*: these can vary in different countries within a specific scientific community. They represent the existing [DDSS](#).
- *TCS system*: this represents the e-Infrastructure for a specific scientific community. It may include the software used to federate National RIs, or the software to present results on the web (web portal).
- *Metadata Catalogue*: this is usually a database where each data object (e.g. file, in case of non-streamed data) is referenced and described by the metadata. It can be used to drive the Web Services.
- *Web Services / API*: this is the entry point where users can access the data. EPOS [ICS](#) has no particular recommendation with respect to the software used to build the [TCS](#) system. What matters is the way [ICS](#) and other stakeholders can access data. API based Web Services ensure data and metadata are accessible and discoverable by humans and machines (e.g. [ICS](#) system).