

Annex No. 10: Definition of a data centre

“A data centre is understood as a centre which has optimized consumption of electricity and uses economical hardware and virtualisation thereof. A data centre further provides leasing and operation of applications including leasing of computing power in a highly secure environment.”

1.1. Basic terms

Optimised consumption of electricity

At present, electricity consumption can be optimised not only by using hardware components with low energy input. To a significant extent, software also plays a role in optimisation of electricity consumption. The most noticeable effect in the area of energy savings is brought forth by hardware virtualisation, which makes it possible to reduce electricity consumption by more than 80%. In cases when virtualisation is already in use, energy consumption can be further optimised through dynamic control of computer resources and power supplies. Current versions of client and server operating systems support optimisation of electricity consumption by shutting down unused processor cores and unused peripherals.

Economical software

Products of hardware manufacturers containing new processors and components with energy-efficient and flexible designs. Thanks to the integration of energy-efficient components, hardware provides a significant enhancement of the ratio of performance to unit of input energy and generates a very small quantity of waste heat. This has a positive impact on the total cost of ownership.

Hardware virtualisation

Virtualisation makes it possible to operate several virtual servers on one physical server. At present, hardware virtualisation is used not only for servers, but also for elements of data warehouses and network elements. Thanks to virtualisation, it is possible to make the use of hardware substantially more efficient and to significantly reduce the number of required hardware elements. Consolidation of hardware with the use of virtualisation brings forth significant energy savings. Virtualisation brings a new level of high availability of virtual servers and applications. These are independent of the actual hardware and can be easily and automatically transferred, without interrupting operation, to another computing node for the purpose of distributing computing power and achieving energy savings through automated shutdown of unused computing nodes in the virtualised infrastructure.

Highly secure environment

A highly secure environment ensures comprehensive protection of stored data against external influences and attacks. Buildings are secured and guarded and premises are monitored. A characteristic of a highly secured environment that the security system is implemented both in the area of IT infrastructure, whereas the protection of documents, secure access, network security, etc. are taken into account, and in the area of non-IT infrastructure, which includes particularly the assurance of a reliable and uninterrupted power supply, cooling and air-conditioning of the premises in which IT equipment is operated, fire-detection systems and automatic fire extinguishers and a full range of additional supporting sub-systems.