

Grid-technologies for Business Tasks

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Are there any benefits for business?

Effective usage of the corporative hardware and software resources

- load balancing
- remote access to specialized software
- collective operations with geographically distributed resources

Calculation time decrease

- aggregation of resources

Wide access and security policies

- three levels (organization -> group -> role in group)

Secure and reliable and effective data storage

- replication of important data
- using of geographically distributed storages

Where one can use grid?

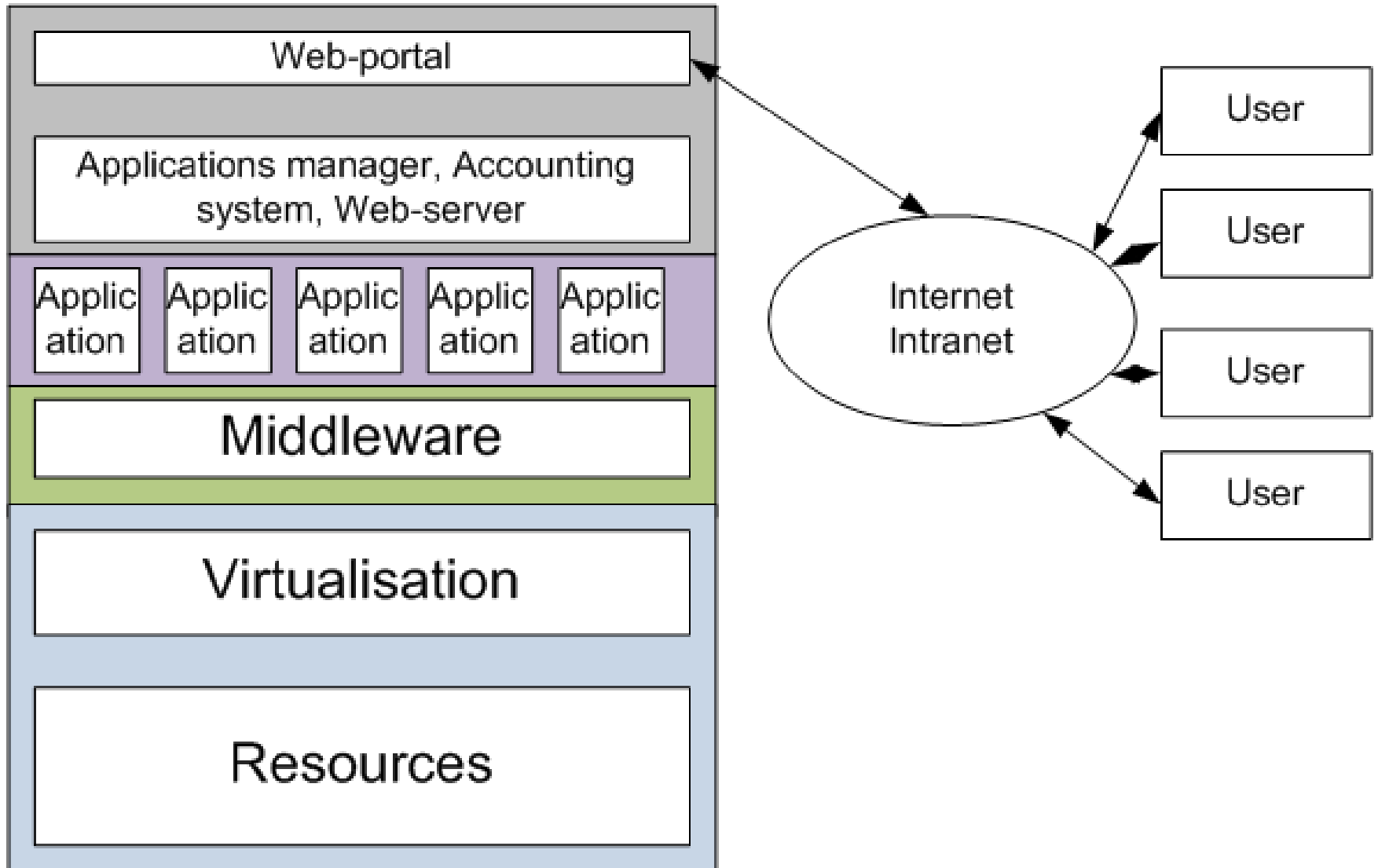
Some of the possible areas for applying grid in business are listed at www.beingrid.eu:

Advanced Manufacturing, Media, Financial, Retail & Logistics, Environment & eScience, Telecom, Tourism, Agriculture, Medicine, etc.

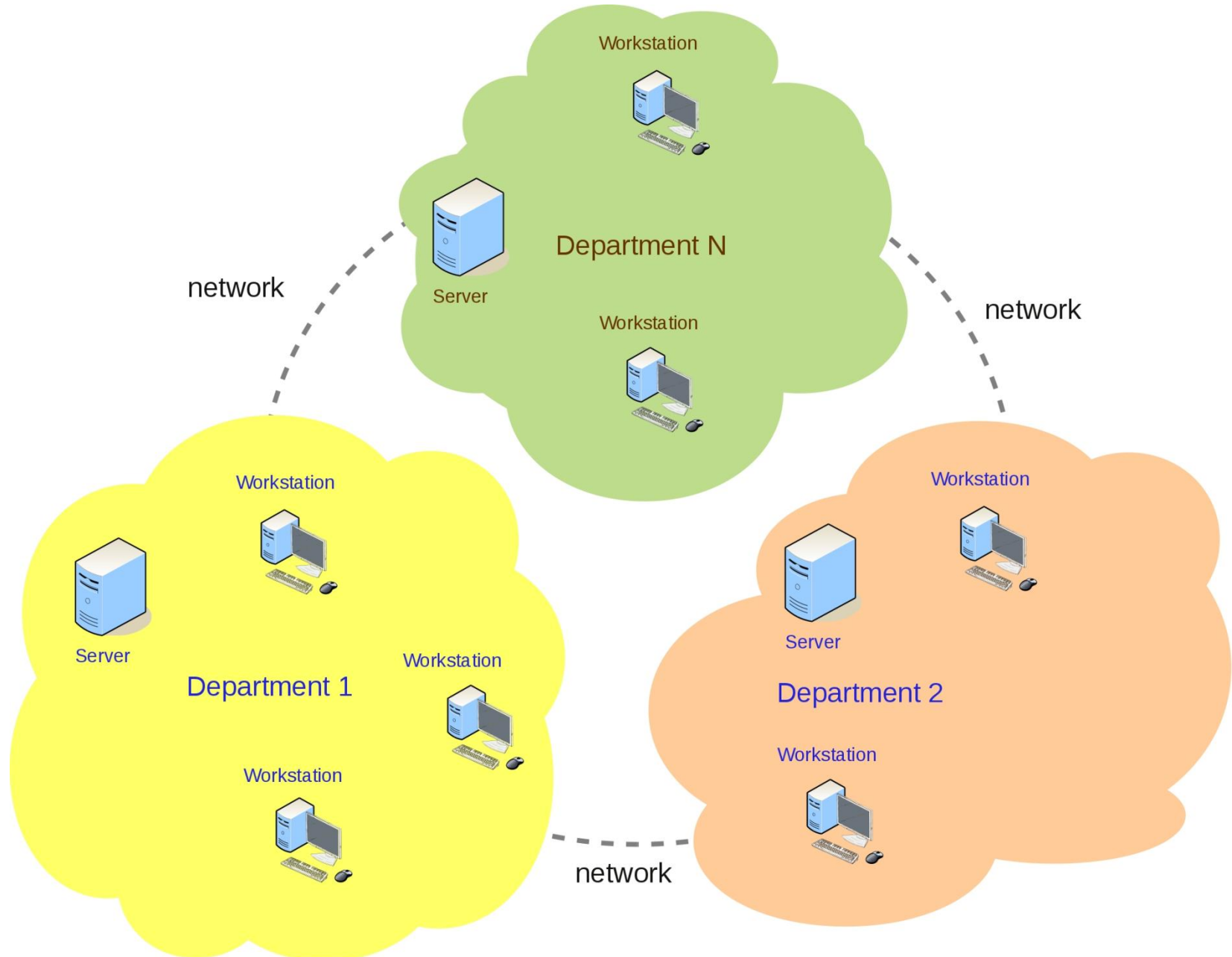
Our experience in running applications in grid

- **Computer Aided Engineering (CAE) tasks**
- **Molecular dynamics simulations**
- **Quantum chemistry tasks**
- **3D models rendering**
- **Processing of the video data**
- **Storing and post processing of the video-supervision systems**

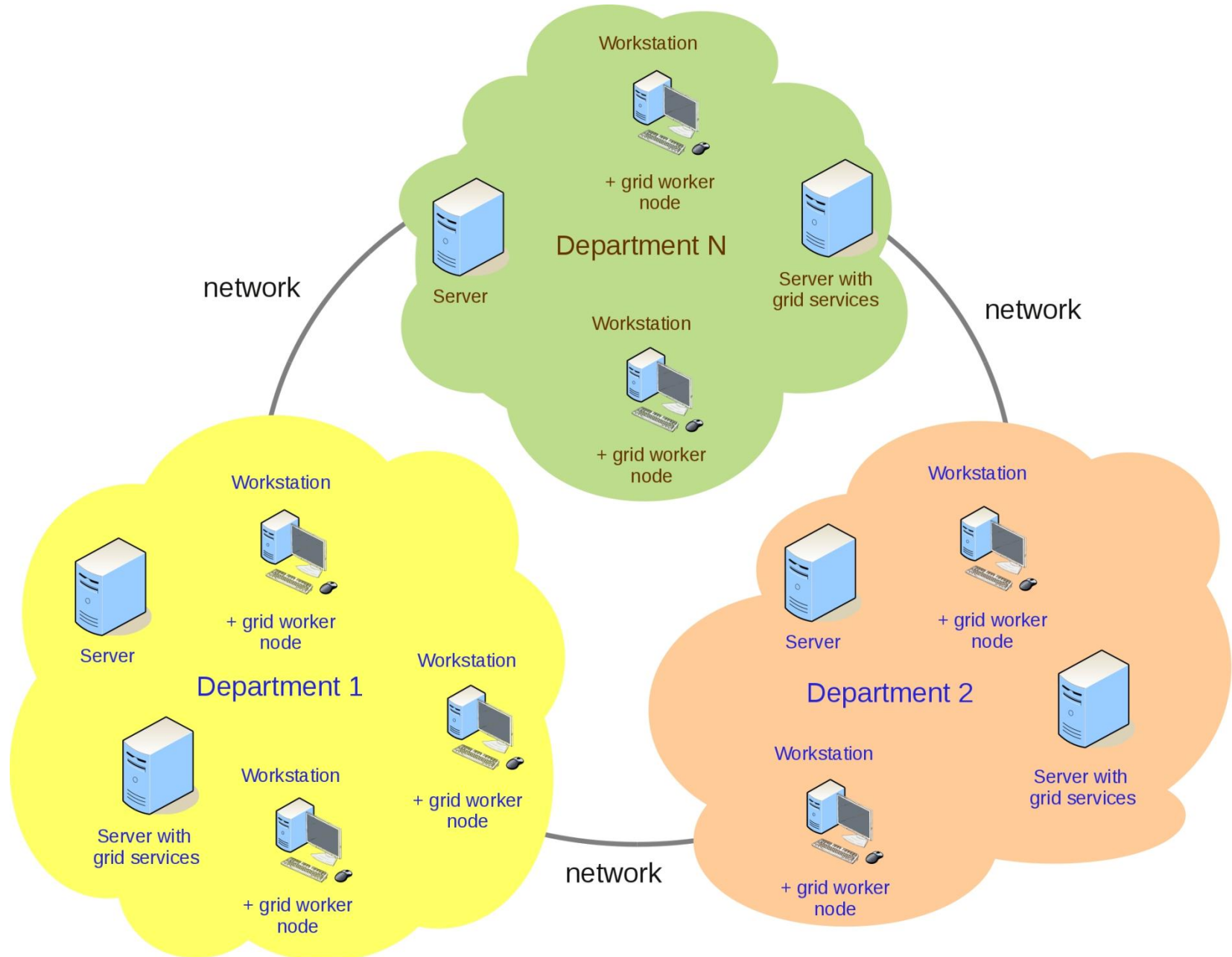
How one can use grid?



Corporative Computer Infrastructure



Corporative Grid Infrastructure

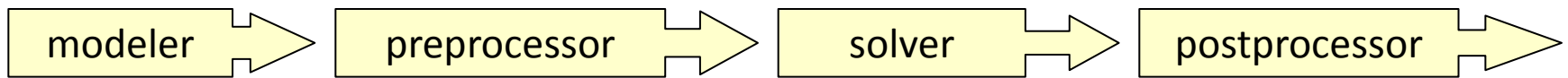


Examples of our work (CAE)

Challenge

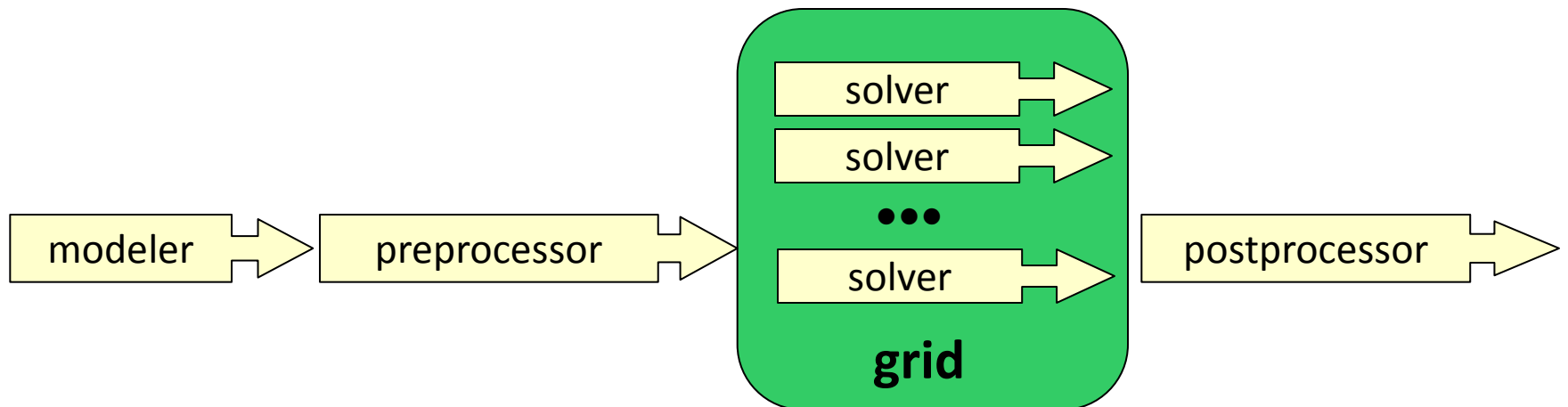
- Processing of the model is very time consumption operation
- Using for calculation only one node it is normal
- Production distributed system (clusters) cost to much (license should be bought for each core
- etc.

General model



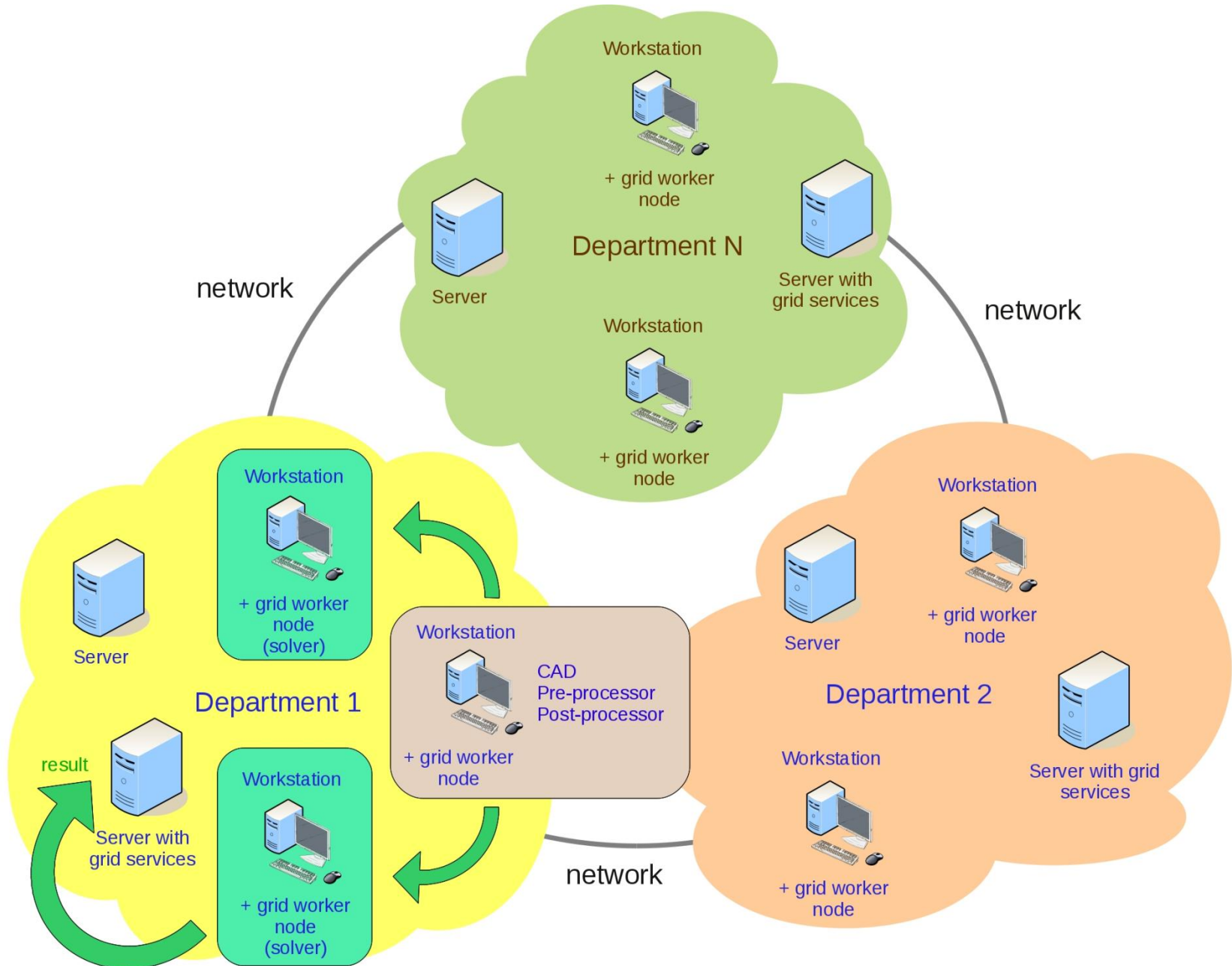
We are using free solver what helps us to avoid license limitations.

i.e. it lets us use as many worker nodes as tasks require.

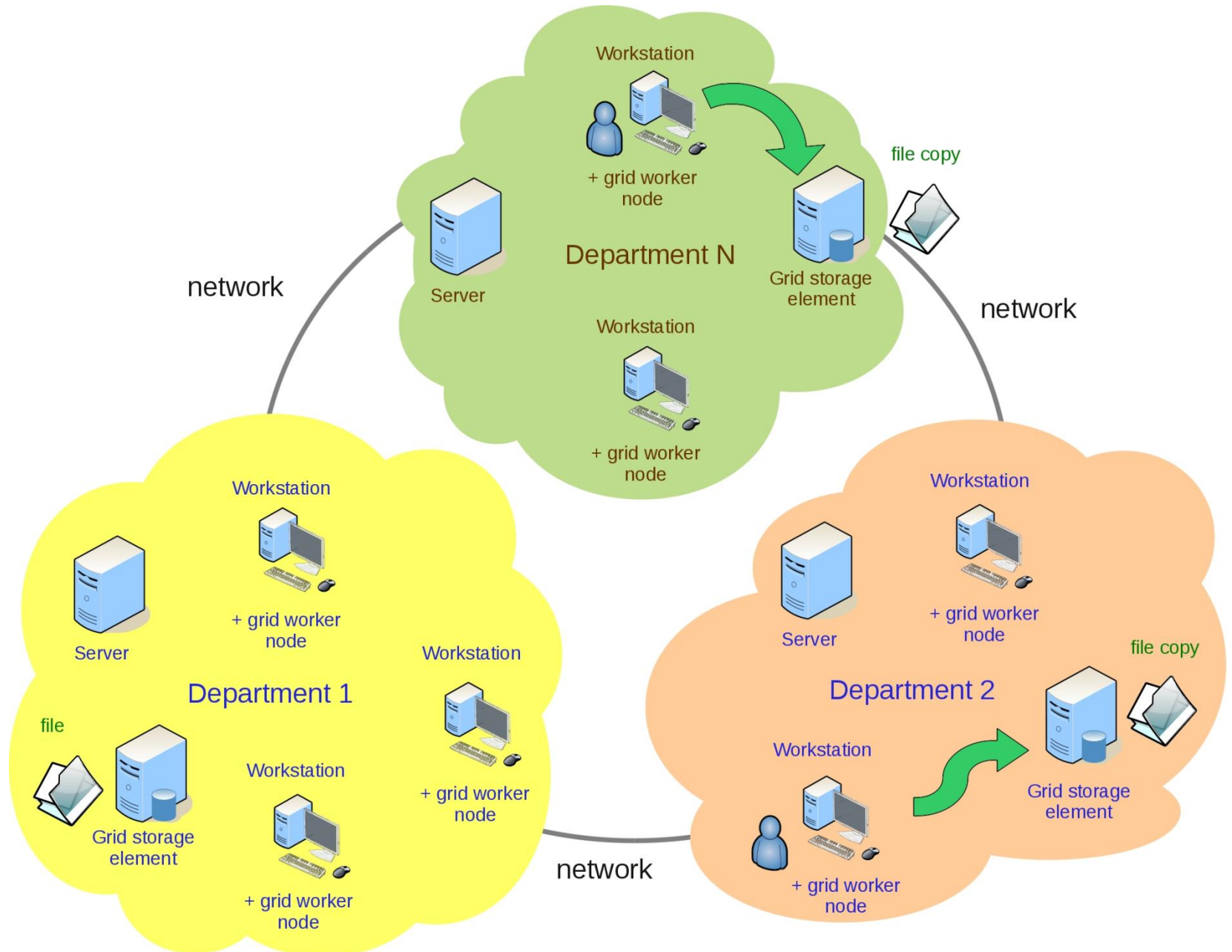


Results of processing are saved in grid that provide reliable and secure way to work with them. 7

Distributed solver in CGI



Files in CGI



Conclusion

There are a lot of interesting experiments in grid2business area but none of them is achieved production quality yet.

There is still some work to do including user-friendly interfaces (portals) to software and hardware resources.

To speed up the development of production quality products business should invest in R&D.

Those pioneers in business who is first starting to use new technologies can benefit from them and get a competitive advantage!