INDICATE Workshop on Geo-coded cultural heritage content

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Museums and cloud computing
Knowledge Café, 3. table - Conclusions
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1. What is cloud computing?
Cloud computing can offer infrastructure (Infrastructure as a service, IAAS) which is probably best described as virtual computers (servers) hosted at provider. It can also provide platform (Platform as a service, PAAS) which is best described as platform for building and deploying custom applications. And it can offer complete software solutions (Software as a service, SAAS).

2. Are cultural institutions already using cloud computing?
Mostly yes. Many use cloud based e-mail services, some use cloud based web hosting, but more advanced usage is not yet common. Some pilot services exist.

3. Advantages using cloud computing
- Low hardware cost, mostly not even needed.
- Dynamic scalability, paying only for what is needed.
- Accessibility, only requirement is internet connectivity.
- Agility, cloud based application can be quickly developed and deployed.

4. Issues with Cloud Computing
- Trust:
  Where is my data? Who else can access it? What happens if provider gets in trouble?
  Not yet addressed properly by providers and legislation.
- Standards:
  Can I move my applications and data to other public provider? Are there any costs associated?
  Solutions are not yet easily transferable, costs to move data can skyrocket!
- Legislation limits:
  Many EU countries and EU legislation limits or prohibits data storage on privately owned public clouds like Amazon, Google or Microsoft if data contains private personal information (in culture it mostly does!). There are many unknowns in making proper legal work and agreements.

5. Conclusions
- Cultural institutions should rely more on National Research Networks (NREN) if they provide cloud computing (e-Infrastructure). In this way we know where our data is and there is also less likely to have issues with low regulations. NREN are also less likely to unexpectedly stop their services. Some NRENs provide services for free!
- Museum workers have different experiences with NREN across EU. Some like Arnes in Slovenia are cooperative, but some are much less willing to address special needs of cultural institutions. NRENs should be encouraged to approach to cultural institutions.

- NRS should develop compatible interfaces! Most new projects are developed on Amazon, Microsoft or Google public clouds because developers are most familiar with these. Transfer to clouds provided by NRENs is then almost impossible. At least there should be some tools provided to assist with moving solutions form mentioned public clouds to clouds provided by NREN.