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Integrating IMS LD and IMS QTIv2 using CopperCore Service Integration

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CopperCore Service Integration

- Funded by JISC ELF toolkit strand
- Joint development of OUNL and OUUK based on earlier work done in the SLeD project
- Goal: to provide a framework for integrating Learning Services with CopperCore, an IMS Learning Design service.



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The Challenge

- IMS LD Specifies
 - activities, resources, services and a learning flow through an XML binding
 - declarative incorporates learning services, like synchronous and asynchronous services
 - described integration with other IMS specs on a XML level, like IMS QTI
 - however does not describe in detail the runtime integration of these services



CopperCore

- Is intended to be used as runtime service which should be included in the context of a learning environment.
- Therefore has no GUI.
- Therefore does not implement any of the services mentioned directly



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CCSI solution

- Glue between the services
- The CCSI will be presented by describing the integration of two services :
 - CopperCore for IMS LD specification IMS QTIv2 the APIS as outcome of the APIS project.



IMS QTIv2

- New model of QTI items
 - includes “Interoperability Integration Guide” describing the synchronisation of QTI outcomes with IMS LD
 - practical solution based on:
 - property name matching
 - resource id matching
 - data type matching

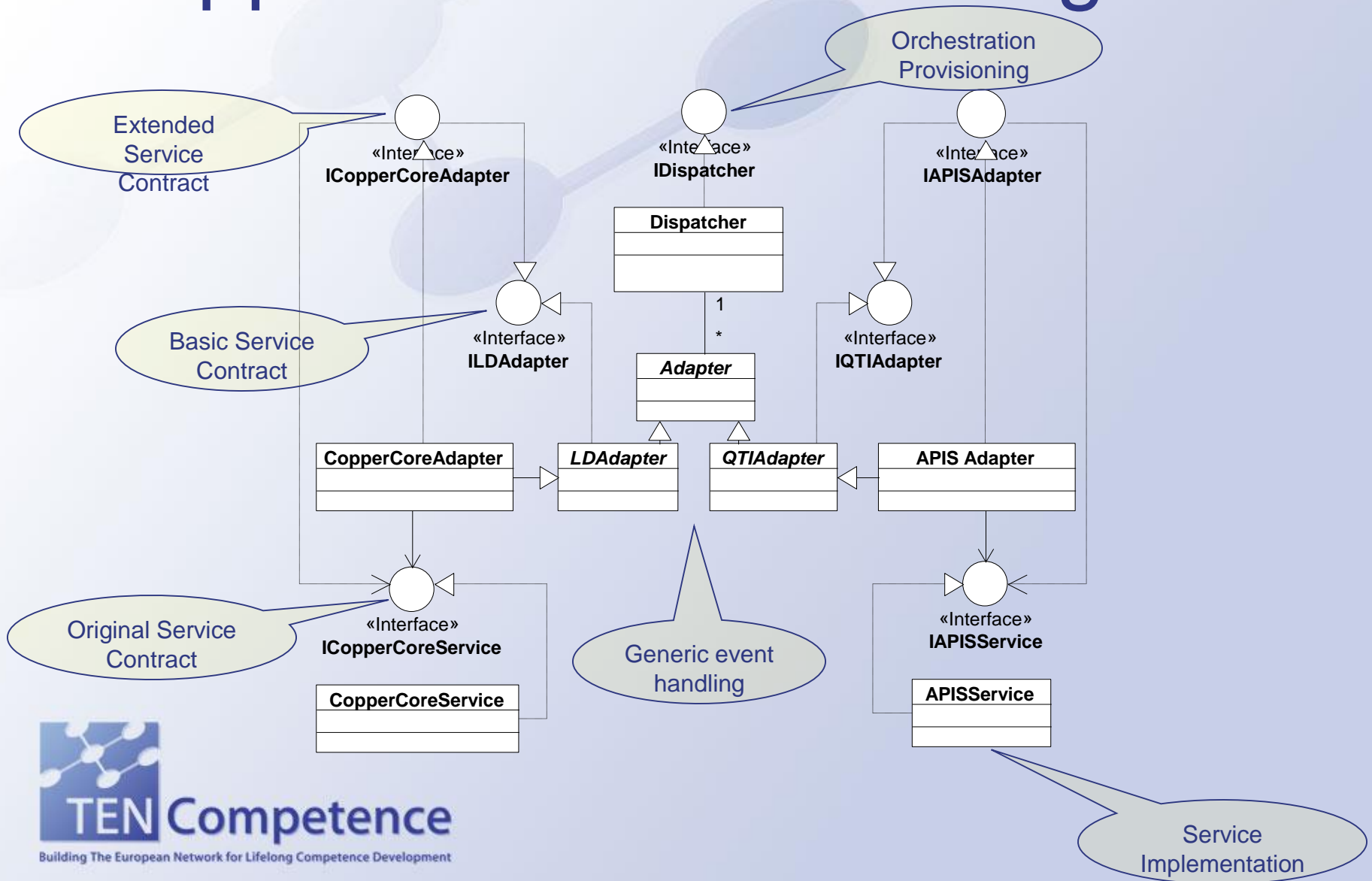


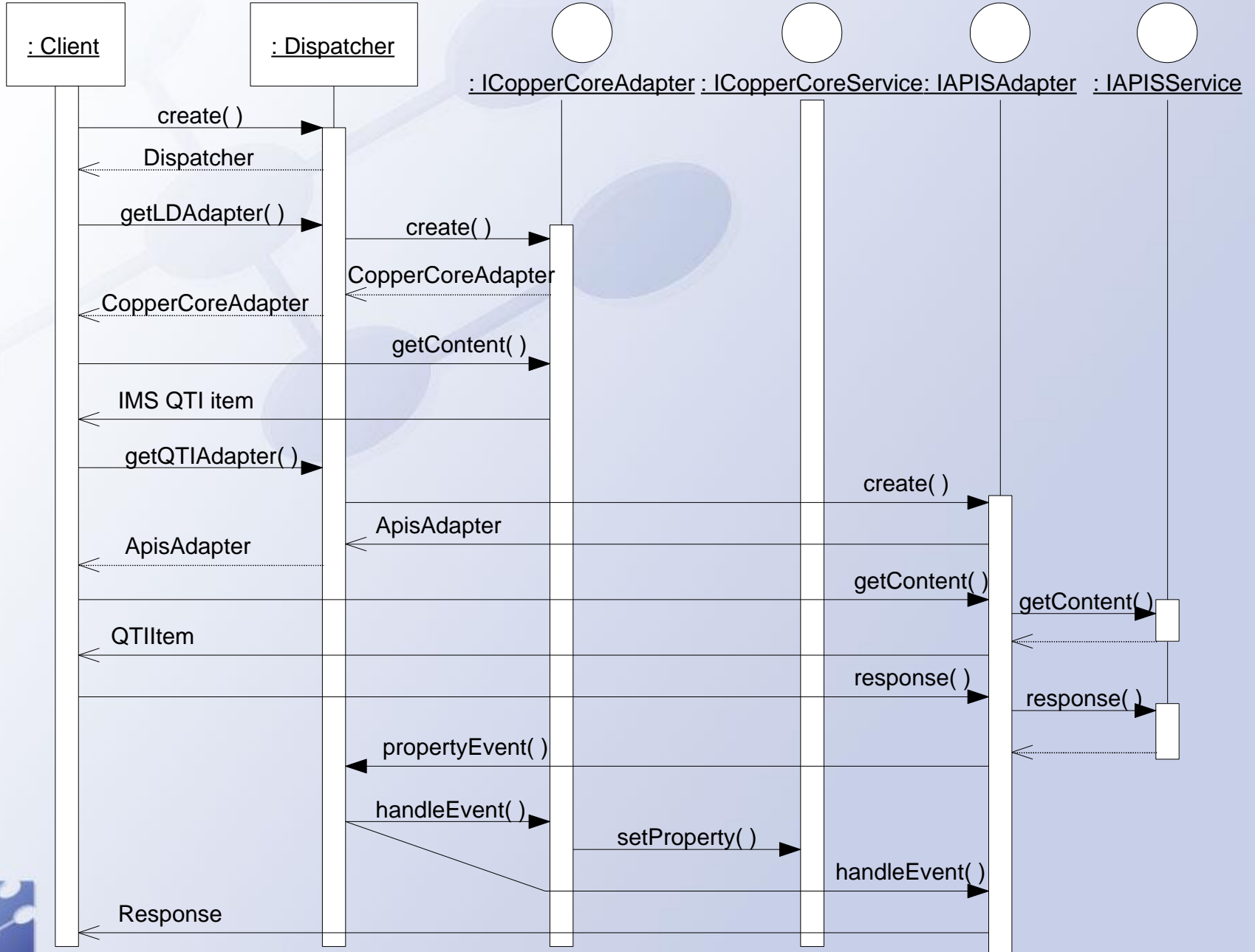
Integration requirements

- Architecture should be non intrusive:
 - implementing services should not have to be modified.
- Implementation independent
 - multiple service implementations may exist. Services should be interchangeable.
- Should allow any extended functionality of service
- Existing clients should be able to benefit with minimal changes

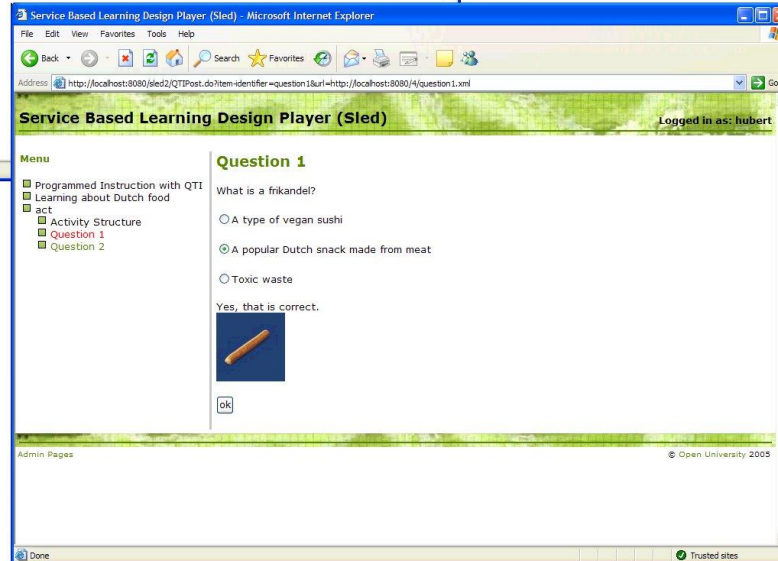
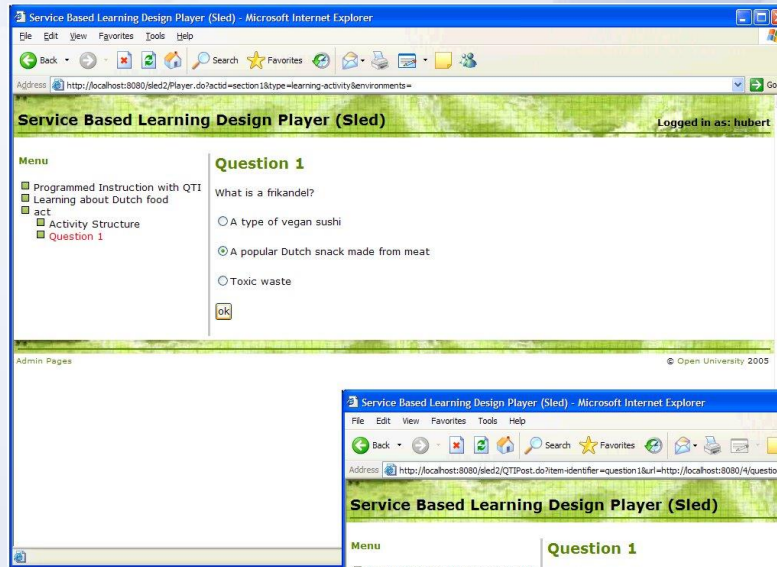


CopperCore Service Integration





Demo



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Conclusions

- The presented CCSI architecture:
 - can handle the integration of LD and QTI
 - minimal/none intrusion on existing service implementations. Only adapter have to be created dealing with cross service concerns
 - allows services to be interchanged
 - allows richness of service to be exploited
 - requires minimal changes on existing clients

