

Anytime & Anywhere: A New Concept in the DSS Design

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General Outline

- Anytime & anywhere decision support
 - Classical DSS architecture
 - Model-Driven Architecture
 - Anytime & anywhere DSS architecture
 - MET – anytime and anywhere clinical DSS
 - Final conclusions
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Anytime & Anywhere Decision Support

- Decision support is needed when and where decision problems arise
 - Decision support is needed for complex and diversified problems that change frequently
 - Anytime & anywhere decision support
 - Providing decision support on demand using available access platform
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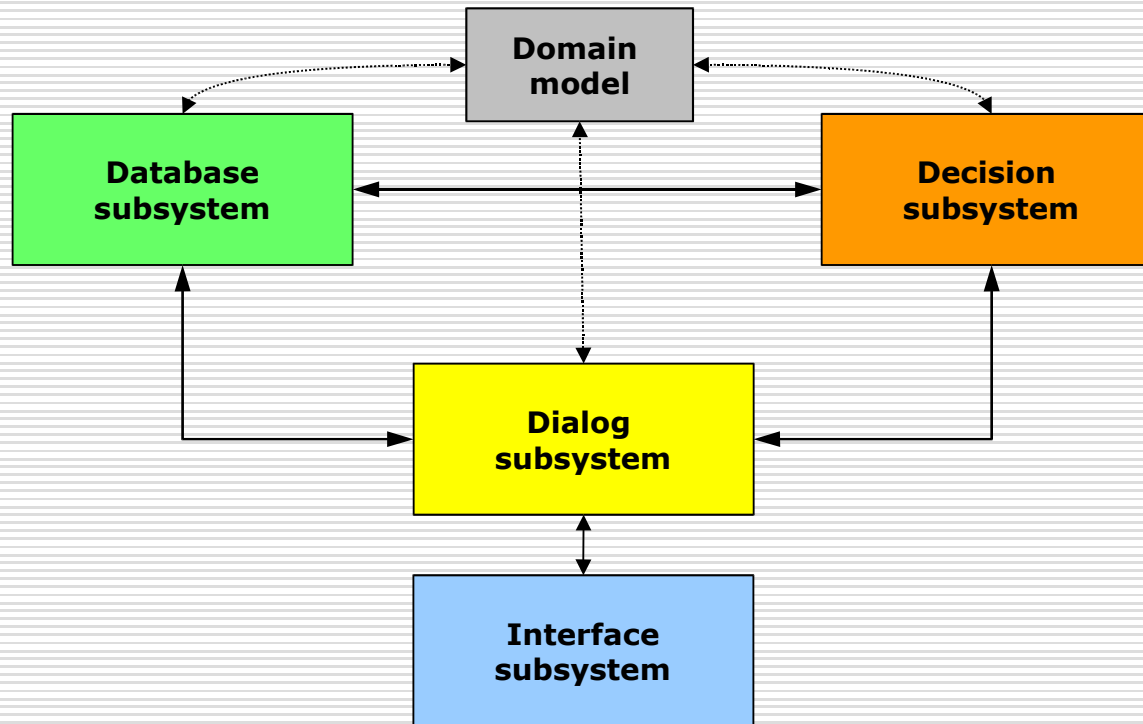
Anytime & Anywhere Decision Support

- Anytime & anywhere DSS
 - Should offer support for various and diversified problems
 - Should accommodate itself to changes in supported problems and to new problems
 - Should run on diversified platforms and in hostile computing and communication environments

 - What architecture will be the most appropriate?
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Classical DSS Architecture

- Introduced by Sprague (1980)



Classical DSS Architecture

- Classical architecture was developed for specific and „fixed“ DSS
 - It is limited to a specific problem
 - It is limited to a specific platform
 - Adding support for new problems and new platforms requires rebuilding the system
 - It is not sufficient for anytime & anywhere DSS
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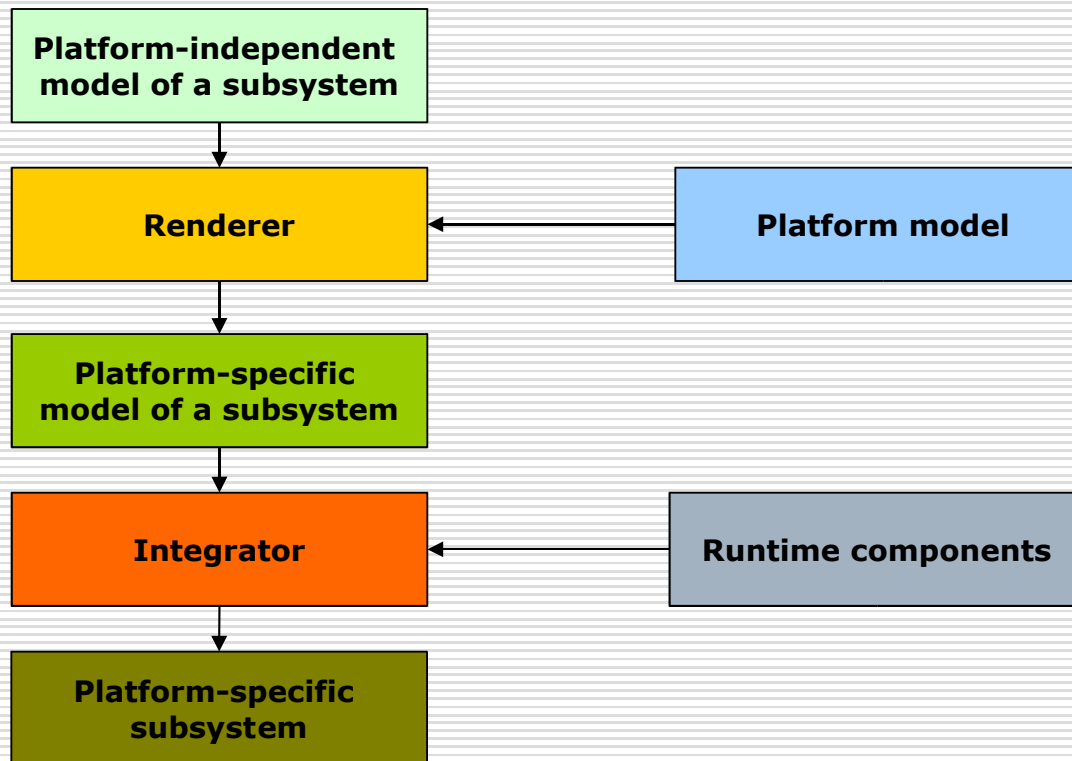
Classical DSS Architecture

	Problem-specific	Platform-specific
Dialog subsystem	+	-
Decision subsystem	+	+
Interface subsystem	+	+
Database subsystem	-	-

- How make specific subsystems general, but aware of specific problems and specific platforms?
 - The answer is Model-Driven Architecture
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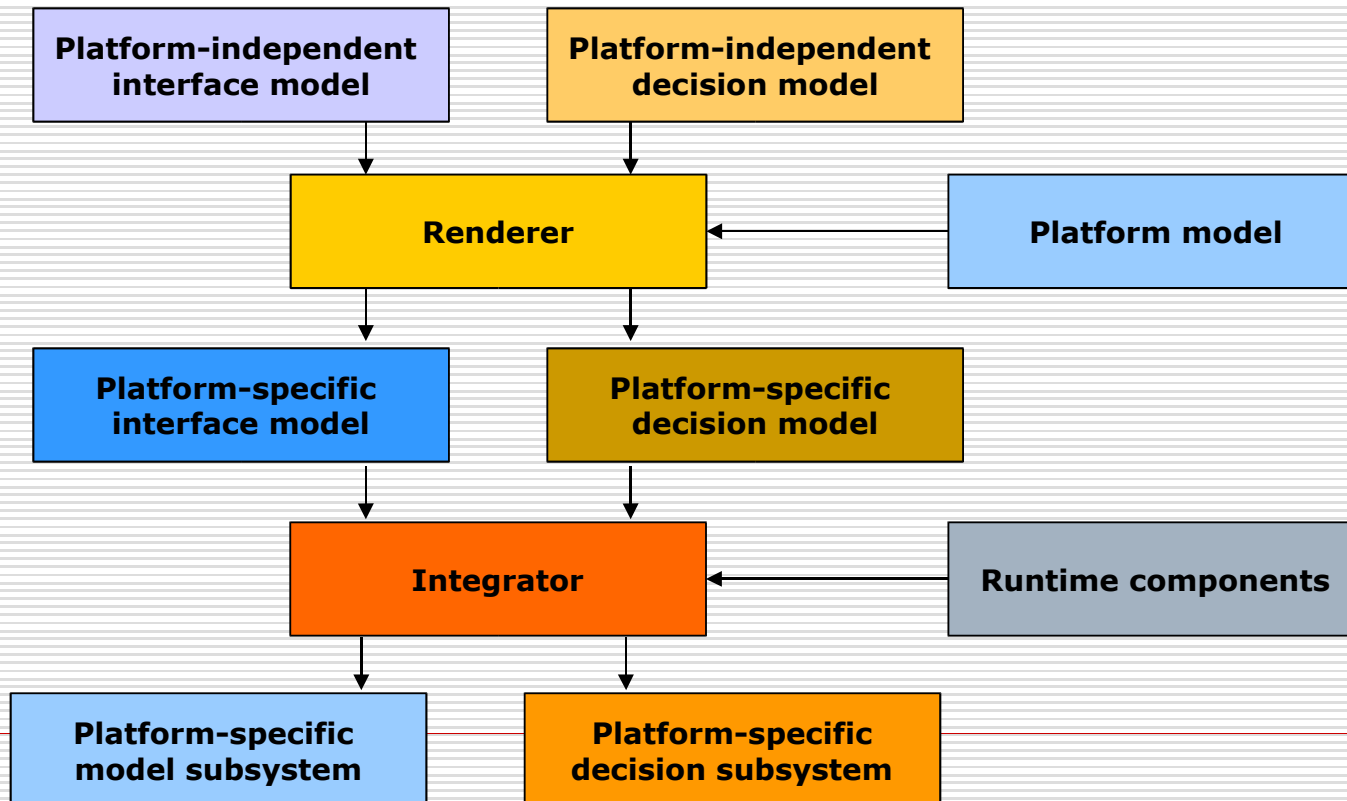
Model-Driven Architecture

- General idea of Model-Driven Architecture



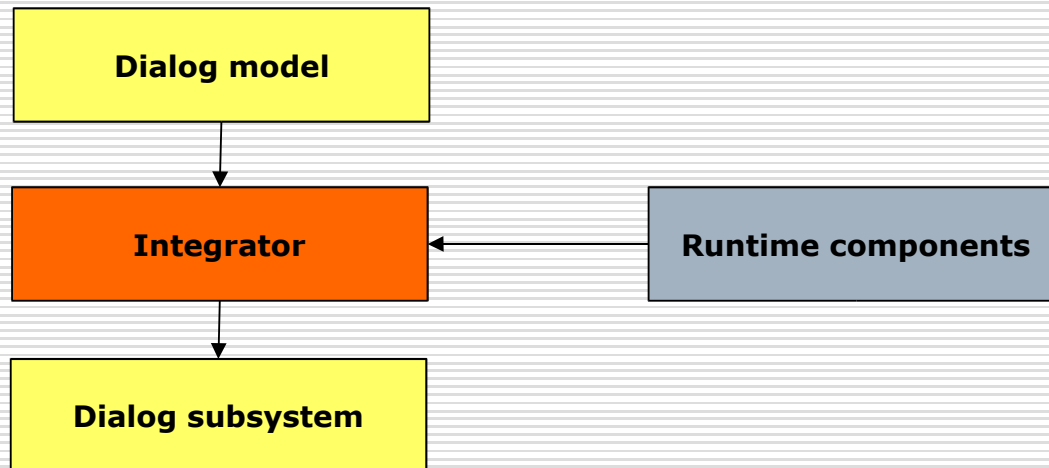
Model-Driven Architecture for Anytime & Anywhere DSS

- Introducing awareness to interface and decision subsystems



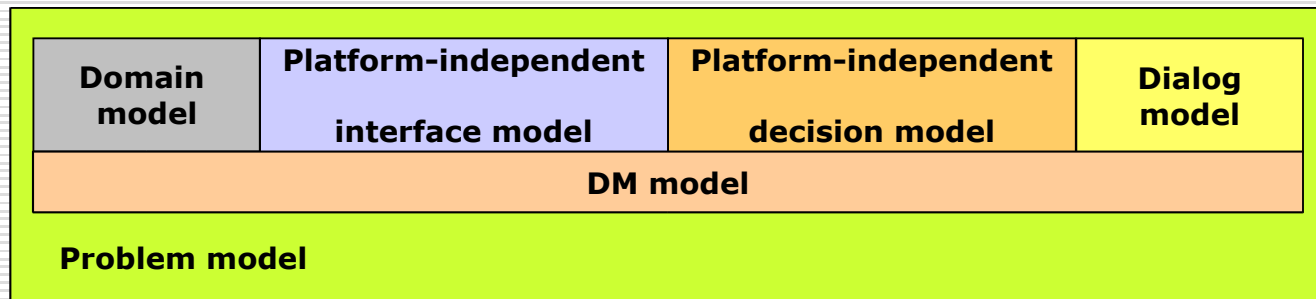
Model-Driven Architecture for Anytime & Anywhere

- Adding awareness to dialog subsystem



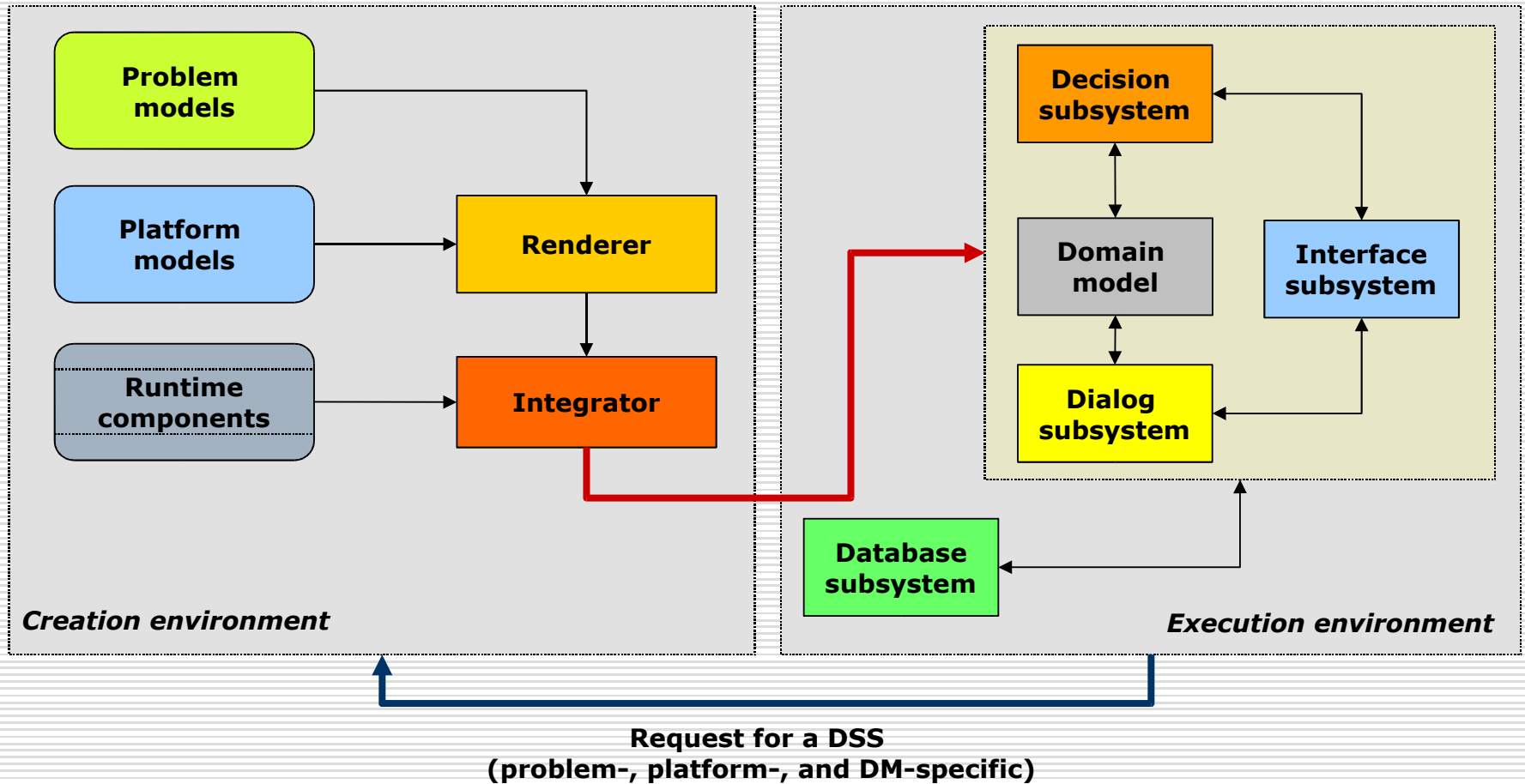
Model-Driven Architecture for Anytime & Anywhere

- All problem-dependent models together

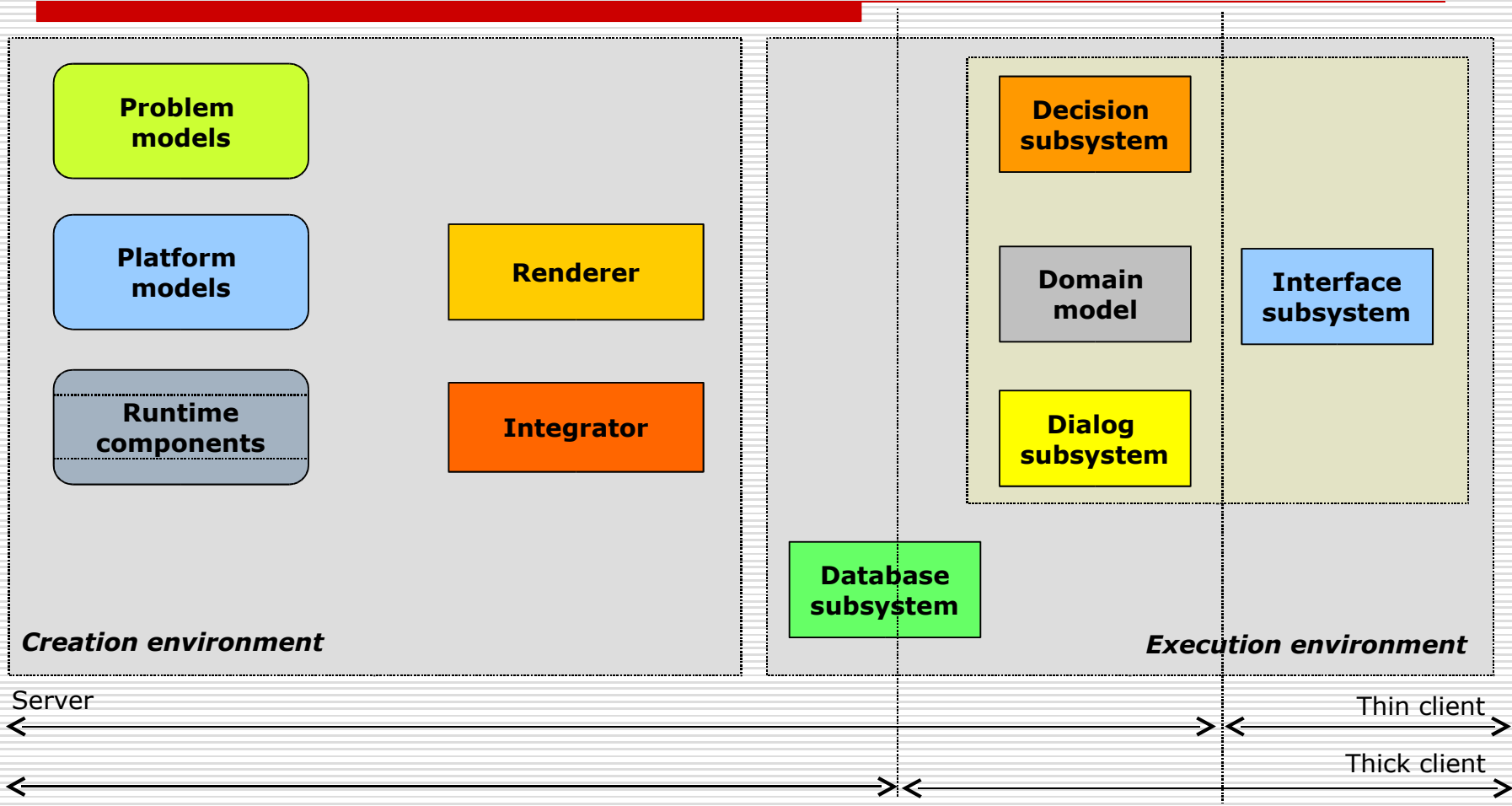


- Different problem models for different decision problems
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Anytime & Anywhere DSS Architecture



Anytime & Anywhere DSS Architecture

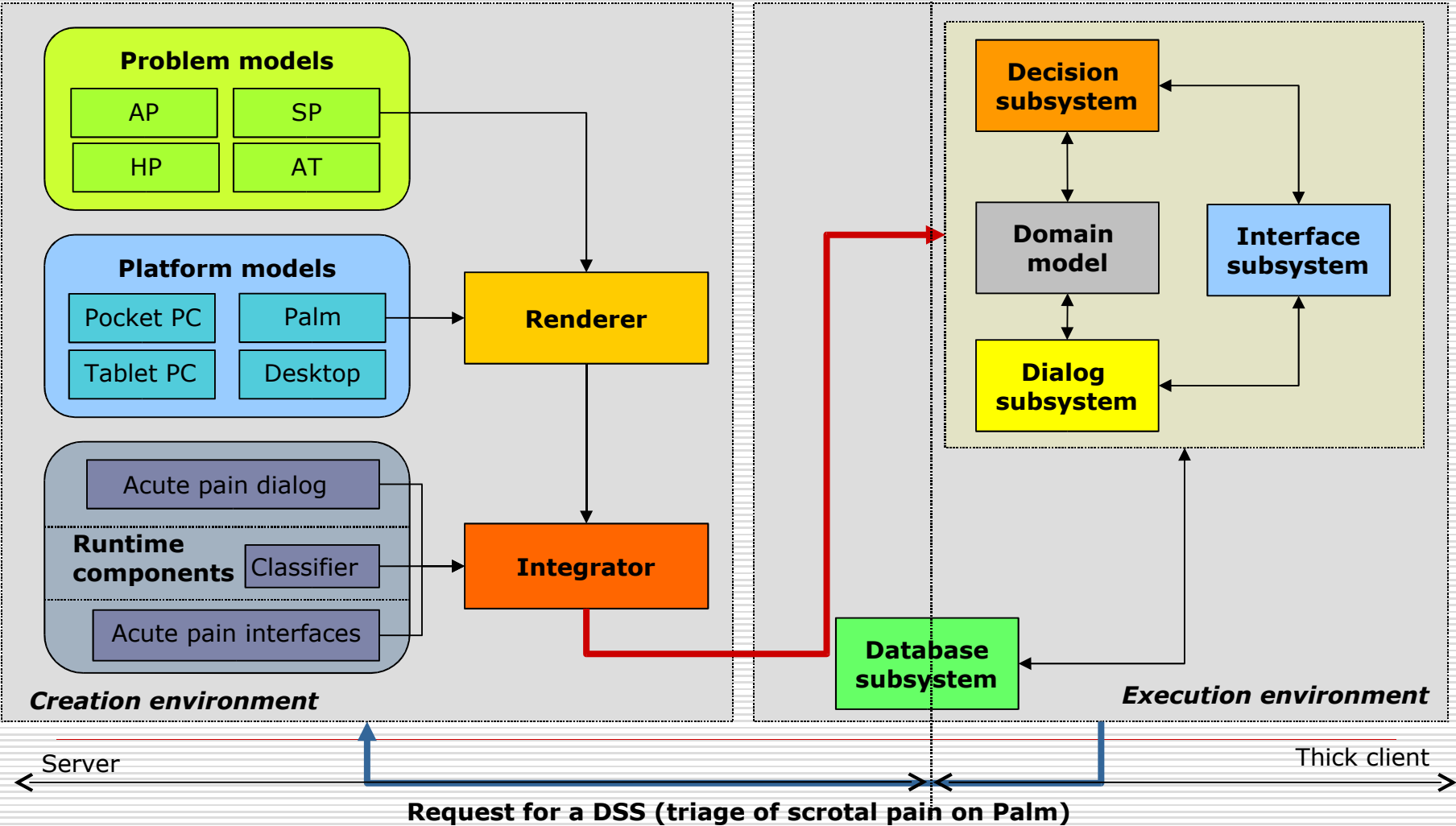


MET: Mobile Emergency Triage

- Anytime & anywhere clinical DSS for supporting triage of acute conditions at the point of care
 - Acute pain (abdominal, scrotal, hip)
 - Asthma
- Runs on a variety of platforms (handheld, tablet and desktop computers)
- Successfully tested in hospital setting during a clinical trial

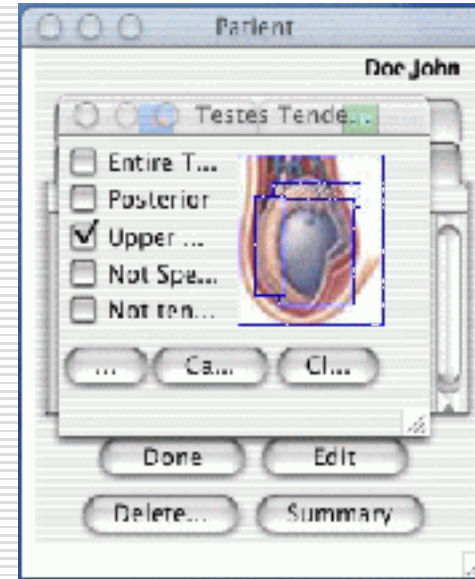
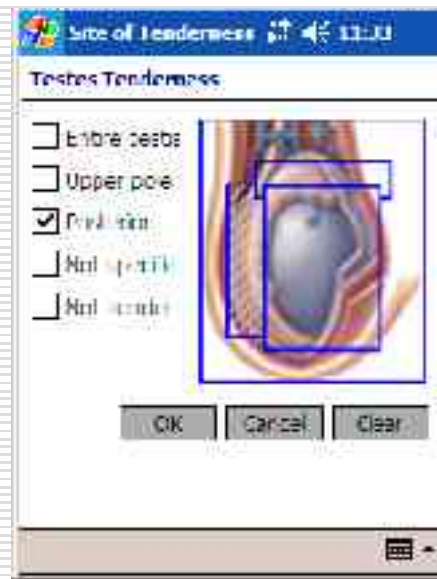


MET Architecture



MET System

- MET on specific platforms



Final Conclusions

- Anytime & anywhere DSS allows dealing with decision problems when and where they arise using available platforms
 - Classical DSS architecture is too limited and should be replaced by the design based on Model-Driven Architecture
 - The idea of anytime & anywhere DSS was successfully implemented as MET and verified in practice
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Acknowledgments

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Thank You

Visit us at:

<http://www.mobiledss.uottawa.ca>
