Extending a VEPR system institutional boundary

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INTRODUCTION

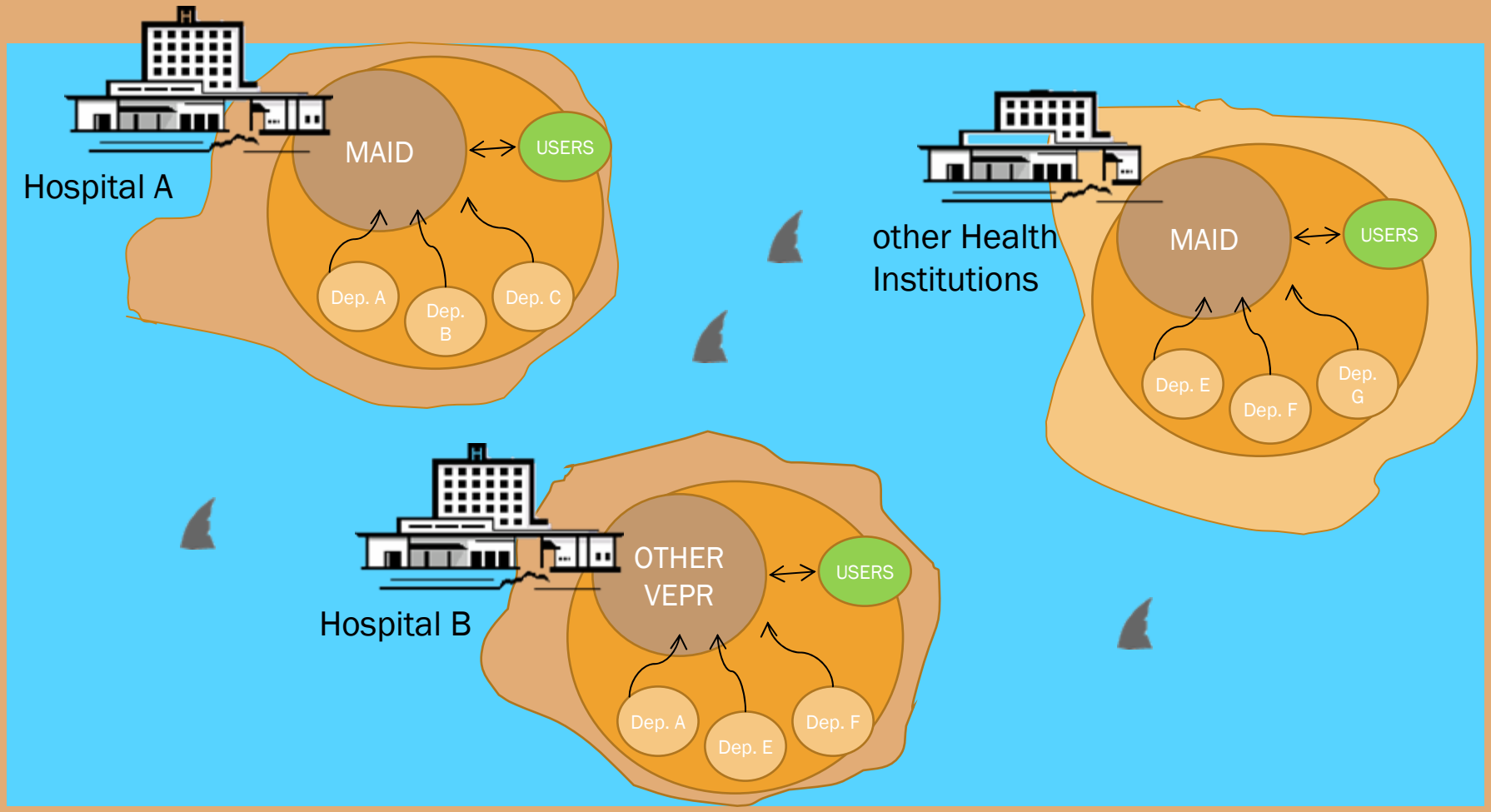
- Information availability is a major concern when the provision of care is at stake.
- Physicians make their decisions based on the information at hand.
- Most of EPR systems are unarticulated and usually address only specificities of a single medical specialty.
- Virtual Electronic Patient Record (VEPR) systems such as MAID - (Multi Agent system for the Integration of Data) provide for the necessary means for intra-institutions departmental information integration.

INTRODUCTION

- However patients are mobile entities, visiting multiple institutions during their life time and leaving a trail of information scattered around.

- In order to overcame the institutional information systems islands, a inter-institution information integration is necessary.

SCENARIO


Hospital A
MAID
USERS
Dep. A
Dep. B
Dep. C
other Health Institutions
MAID
USERS
Dep. E
Dep. F
Dep. G
Hospital B
OTHER VEPR
USERS
Dep. A
Dep. E
Dep. F

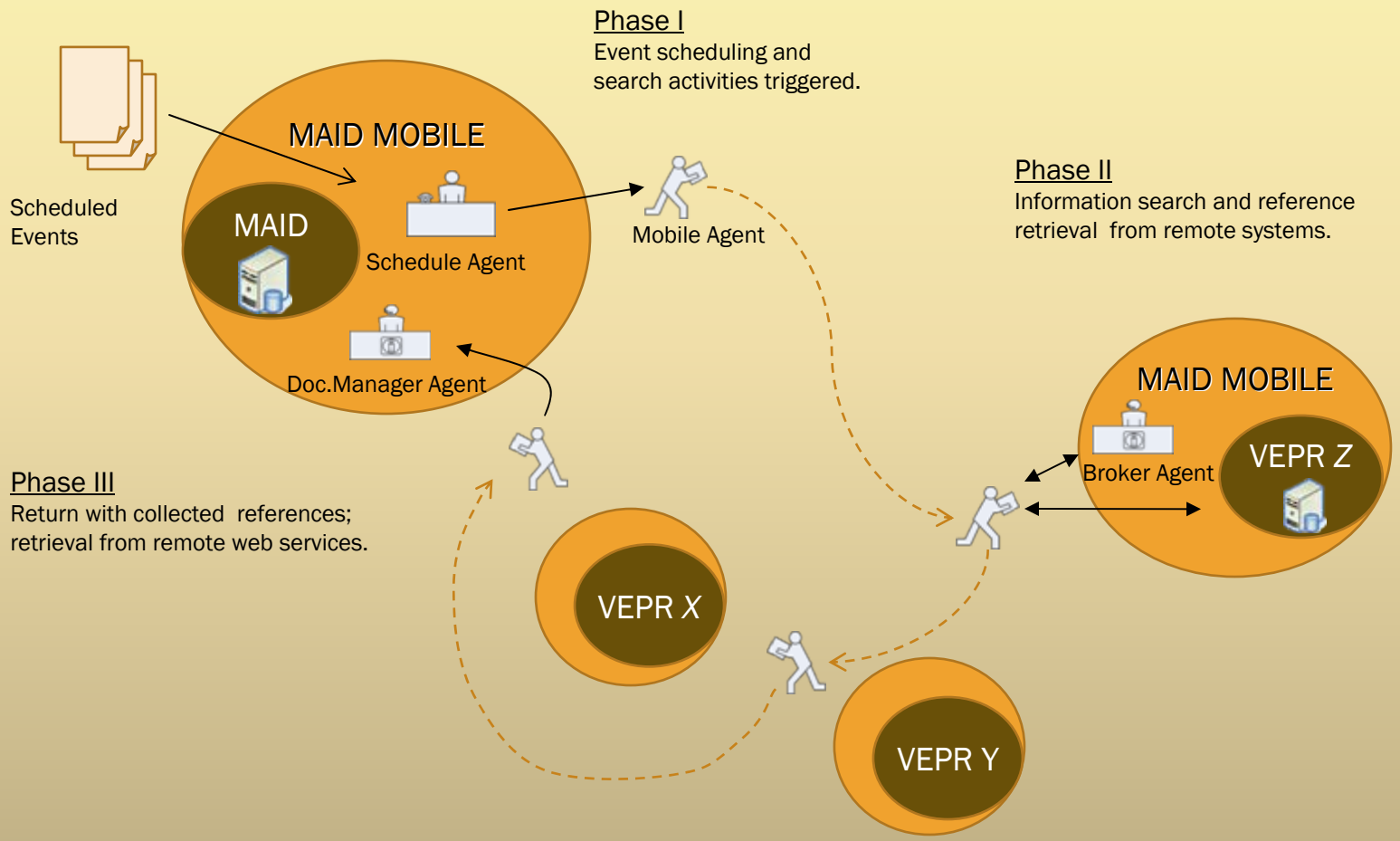
QUESTIONS

- How to bridge the institutional information systems islands?
- How to enhance the provision of up to date and, as much as possible, complete patient information?

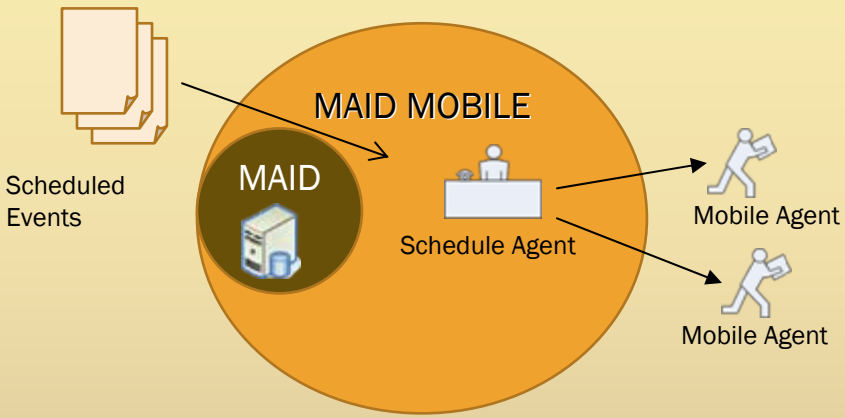
METHODS

- We start from a multiagent based VEPR system.
- Extend it with inter-institutional information search and retrieval capabilities using mobile agents.
- Test pilot system implemented using Jade multi agent platform with the inter-platform mobility add-on.

SYSTEM OVERVIEW

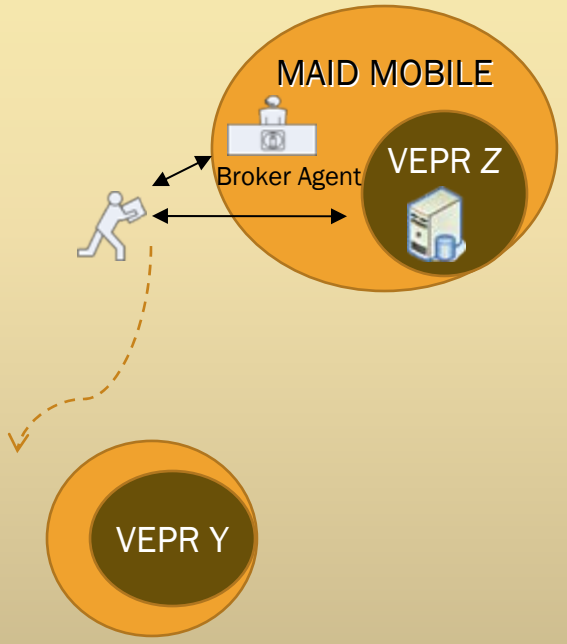


PHASE I – Event Scheduling



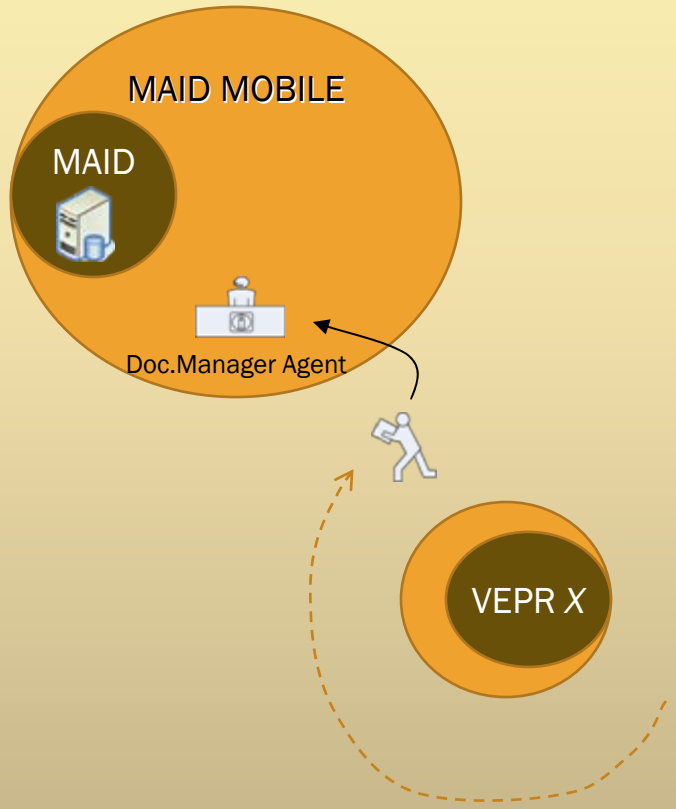
- For each patient, two mobile agents are sent looking for information.
- Along with the patient id
  - One agent receives a set of locations known to have information.
  - The other agent, the complementary set of all locations.
- New locations can be discovered along the way.

PHASE II - Retrieving references



- Mobile agent moves through a set of remote systems contacting the local broker.
- The broker agent manages incoming agents request providing the mobile agent with interfaces which enable querying the local VEPR.
- The mobile agent asks for document references from a given patient and other systems that are known to have additional patient information.
- Mobile agents stores all information adding new systems to its itinerary.
- Continues to the next system.

PHASE III – Returning results



- Document references collected are delivered to the Document Manager Agent along with a set of new contacted remote systems.
- Referenced documents are scheduled to be collected from remote webservices.
- Upon retrieval documents are made available to local users through the VEPR.

CONCLUSIONS

- The system is intended to enhance an institutional VEPR system in order to make available to care providers a more complete patient clinical history.

- The mobility behavior eliminates the need for long running communication channels between institutions and provide for stronger external data discovery procedures that don't lead to local communications system overloading.

- Additional work is planned for this system regarding security and ontological issues regarding data transport and data integration respectively.

REFERENCES & CONTACT

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