

# Semantic Email on the Social Semantic Desktop

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ESWC 2008

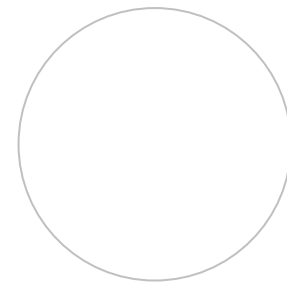
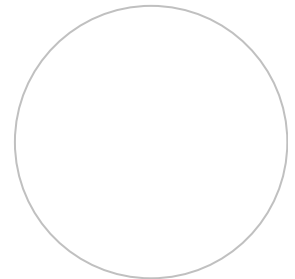
June 2008

Tenerife

# Outline...



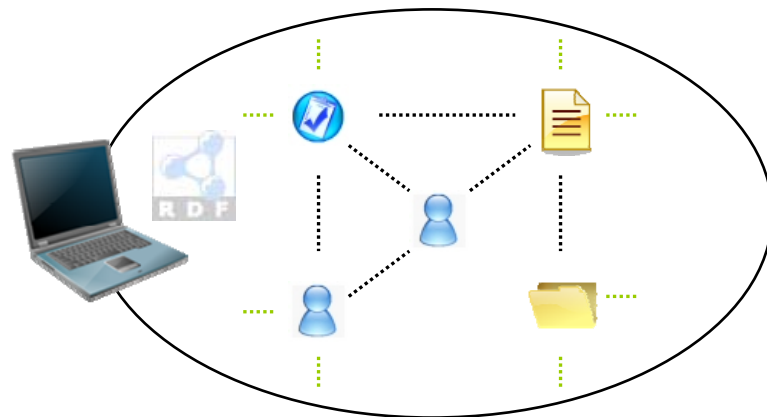
- Introduction
  - Semantic Desktop
  - Email
  - **Semantic** Email → **Social** Semantic Desktop
- Semantic Email
  - Semantic Annotation
  - Email Ad-hoc Workflows
  - Workflow Example
- Semanta – Your Personal Email Assistant
- Future Work & Conclusion



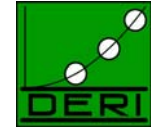
# Semantic Desktop



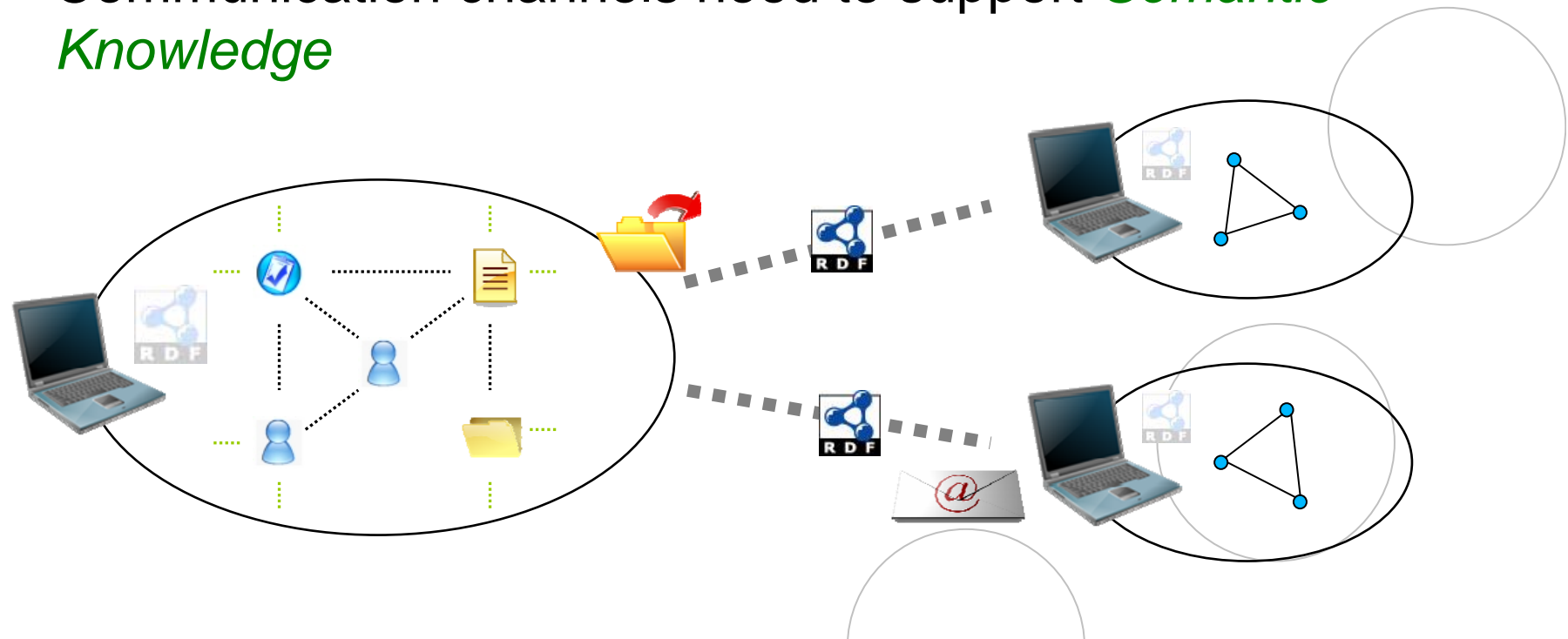
- *Semantic Web* technology on the *Personal Desktop*
- Objects on the desktop become *Resources* with a URI
- Semantic Web Technologies improve *Data Integration* and *Retrieval*



# Social Semantic Desktop



- *Sharing* resources within *Network* of Semantic Desktops
- *Social* aspect of SSD depends highly on *Communication*
- Communication channels need to support *Semantic Knowledge*



# Email



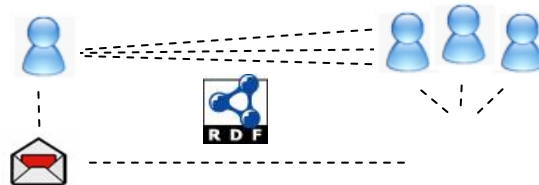
- Most popular means of *Electronic Communication*
  - Asynchronous Communication
  - Flexible, dynamic nature
- Email is also a *Virtual Workplace*
  - *Collaborative Environment*
  - Knowledge creation, management and sharing
- Email Problems
  - Email Tracking
  - Email Classification
  - Email Retrieval
  - *Email Overload*



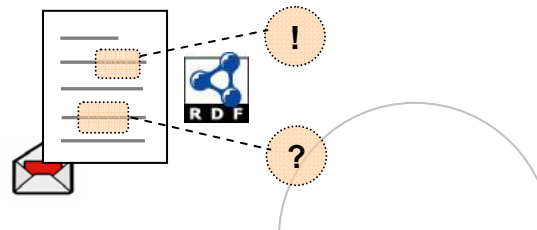
# Semantic Email



- Eases *Email Overload* – Classification, Retrieval, Tracking
- Enhances *Data Representation + Unification* on and between SSD's
- Email Annotation
  - i. *Thread metadata* - Email Sequence, Social, Temporal Metadata



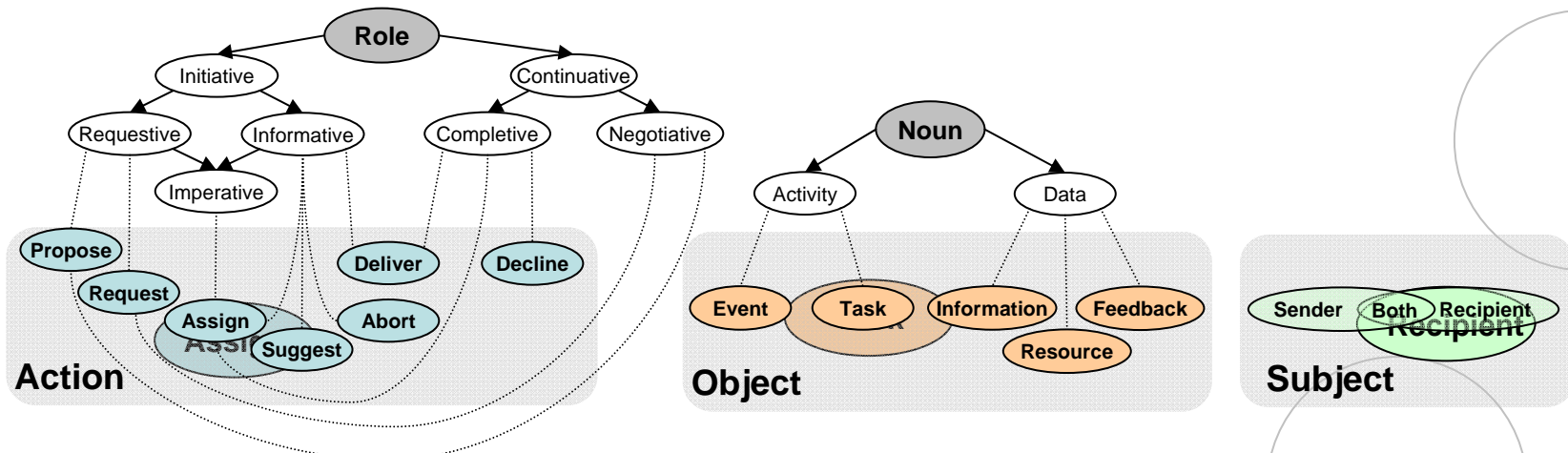
- ii. *Content metadata* - Intents and Expectations of written dialogue



# Email Speech Acts



- *Speech Act Theory*
- Multiple *Intents* and *Expectations* of an Email's content
- Email Speech Act Model: [**Action**, **Object**, **Subject**]

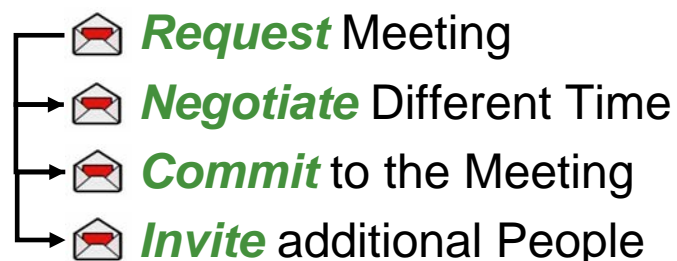


- Example “...Please make sure you have the document ready!..”

# Email Ad-Hoc Workflows



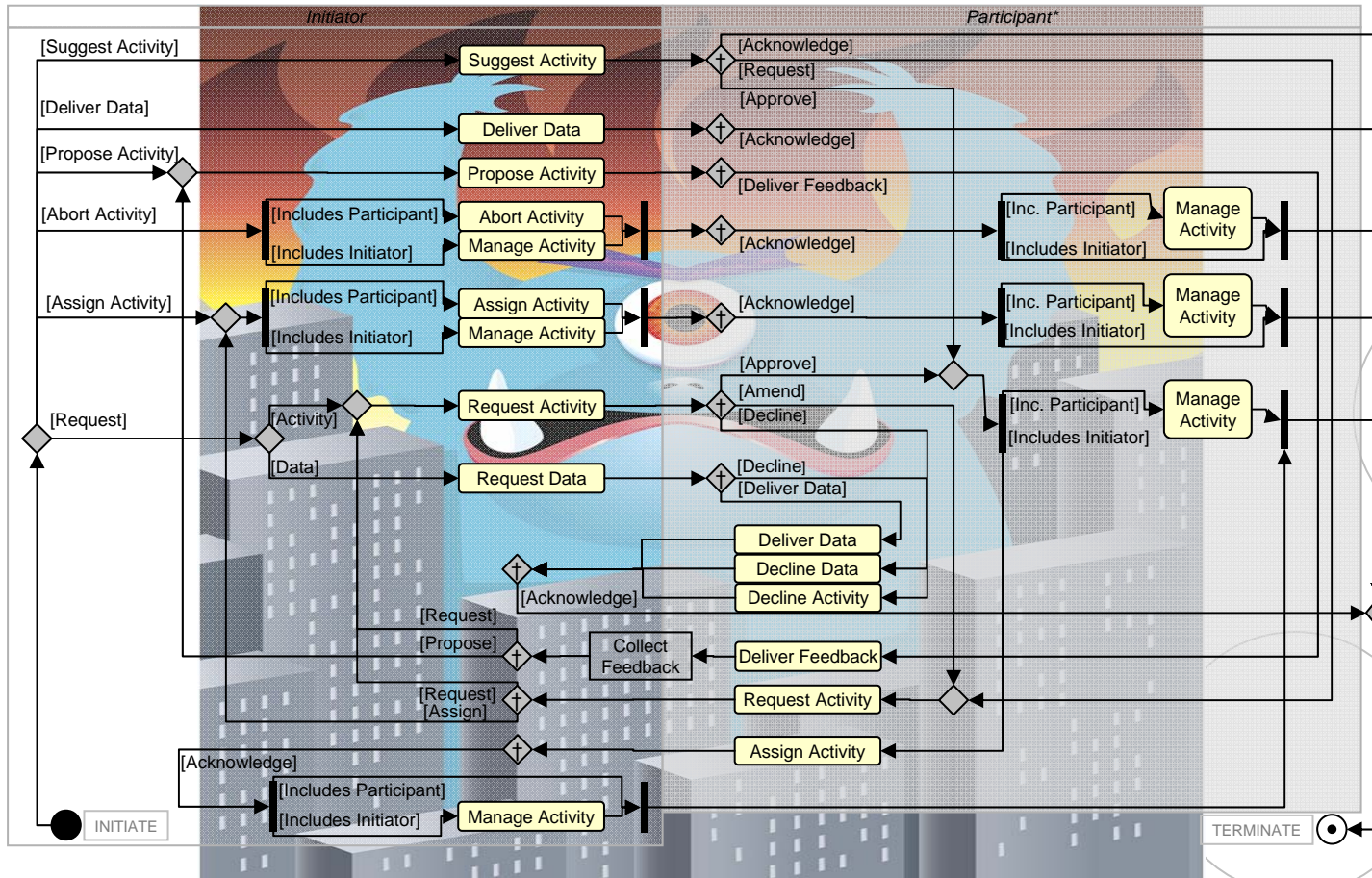
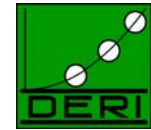
- Email Conversations consist of concurrent, implicit, well-formed *Ad-Hoc Workflows*
- Example:



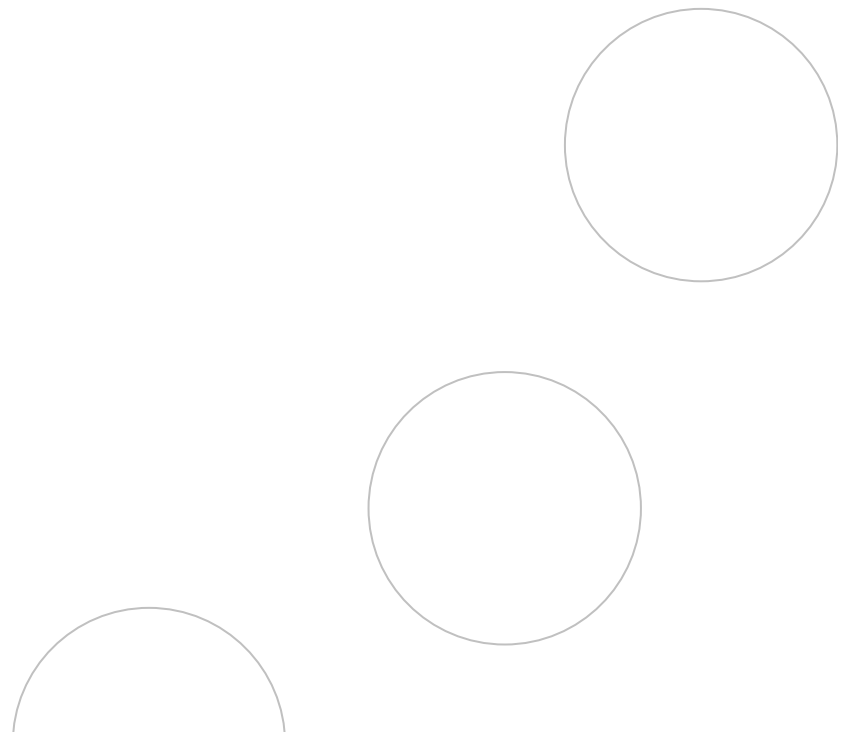
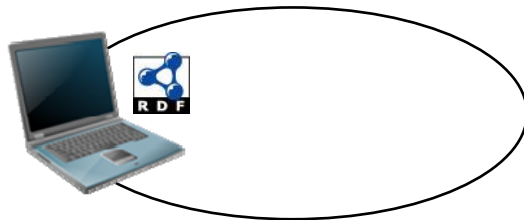
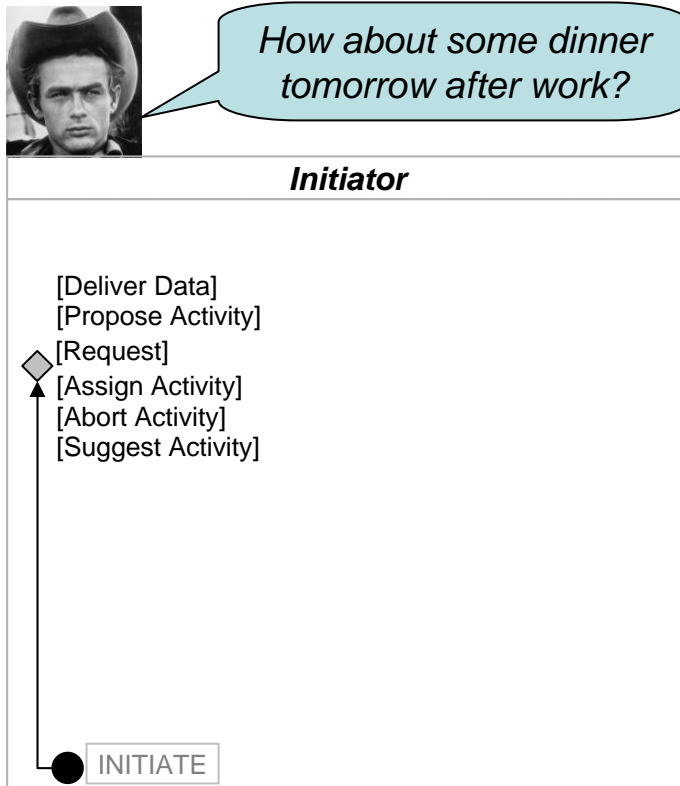
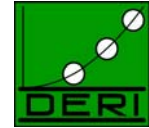
- Email Speech Act = Start/Continuation of a Workflow
- *Workflow Artefacts* – Shared concepts e.g. Events, Tasks, People, Projects...
- Artefacts created *within* Email need to be exported and shared between different SSD's



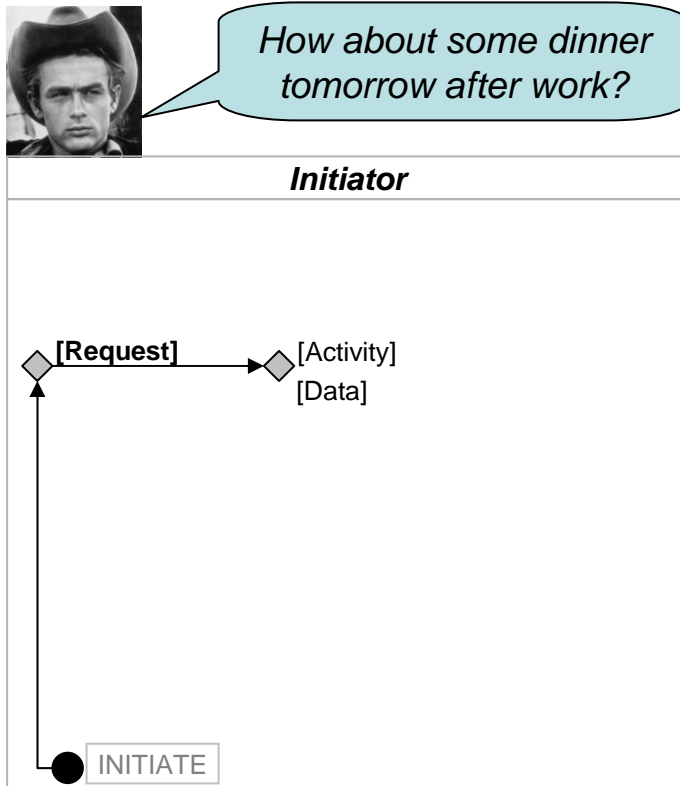
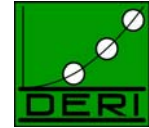
# Modelling Ad-hoc Email Workflows



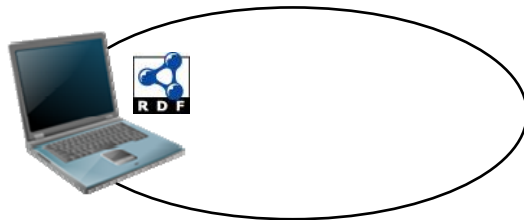
# Workflow Example



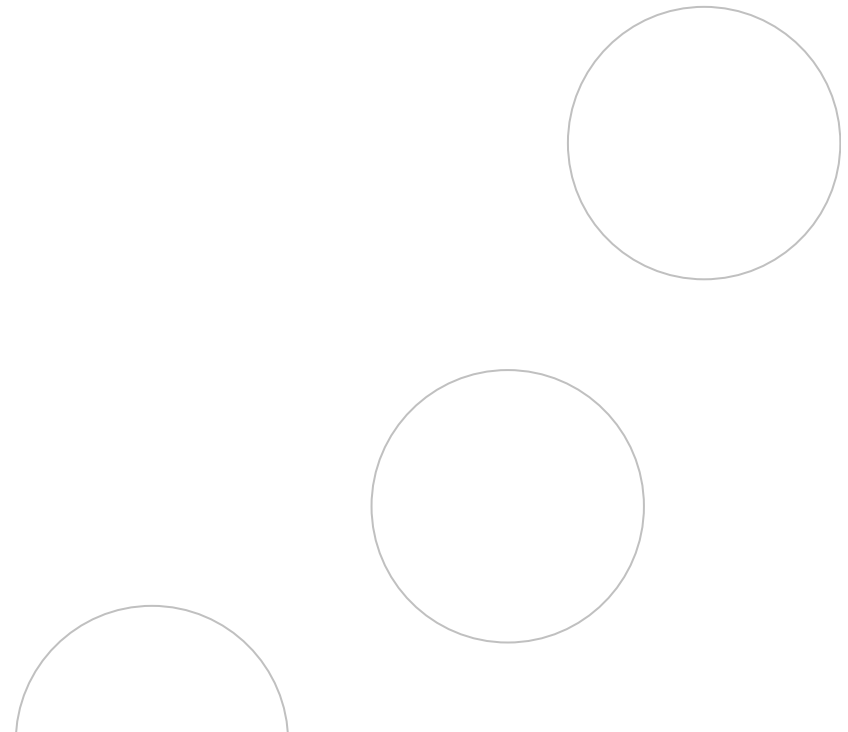
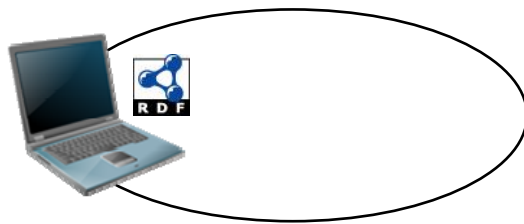
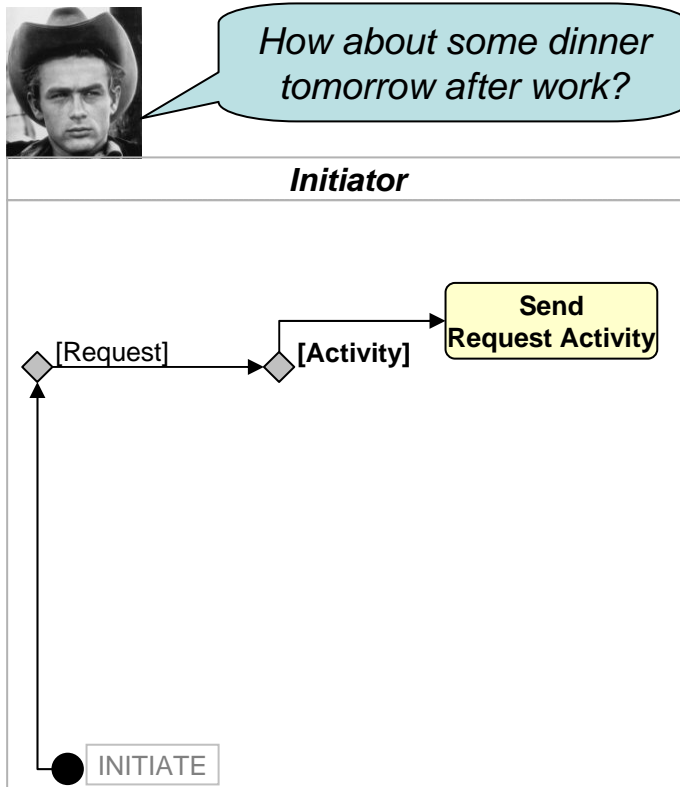
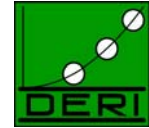
# Workflow Example



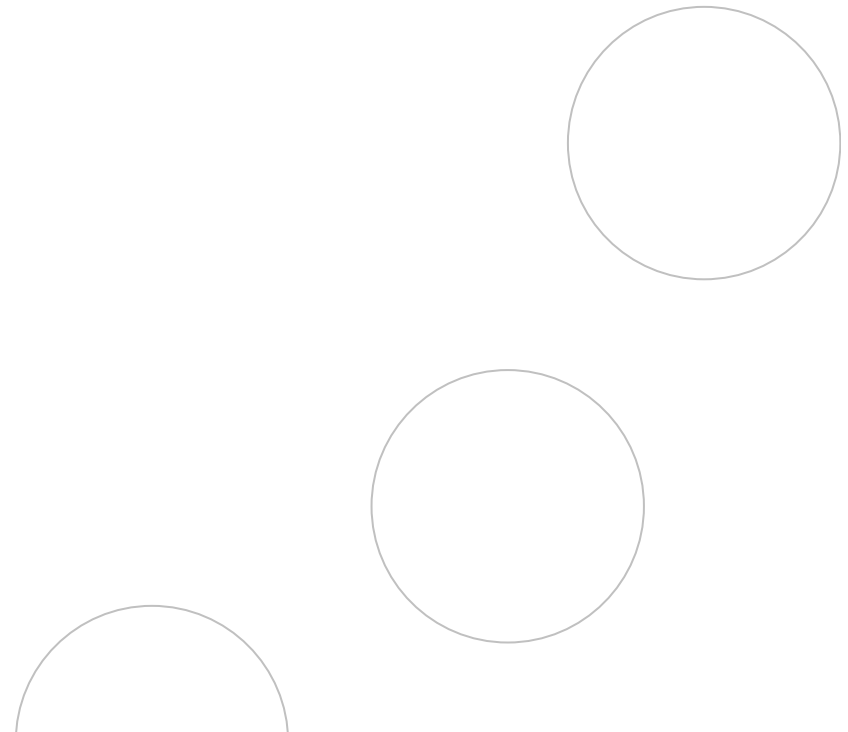
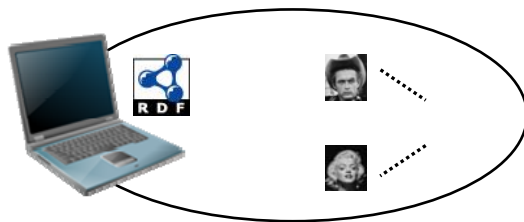
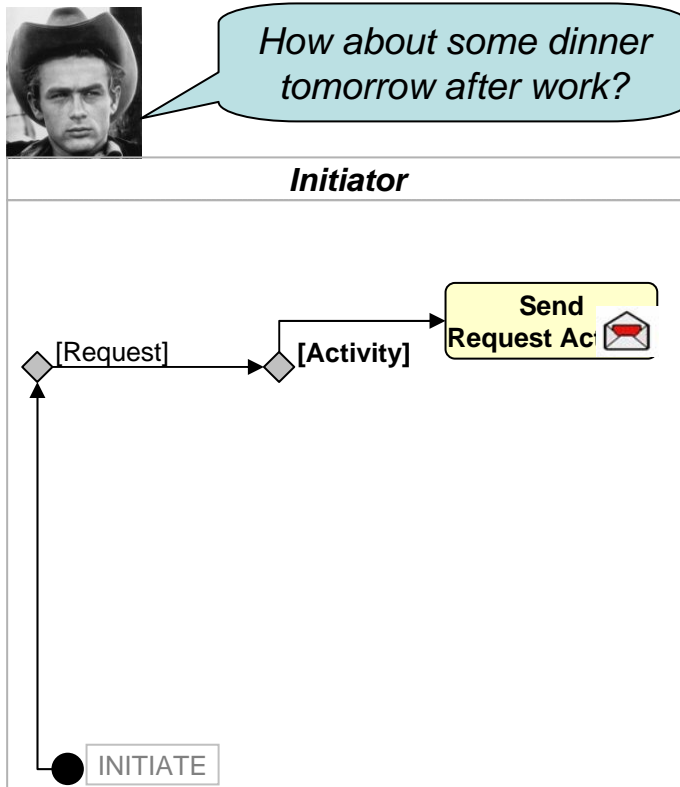
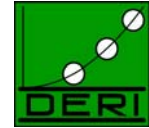
How about some dinner tomorrow after work?



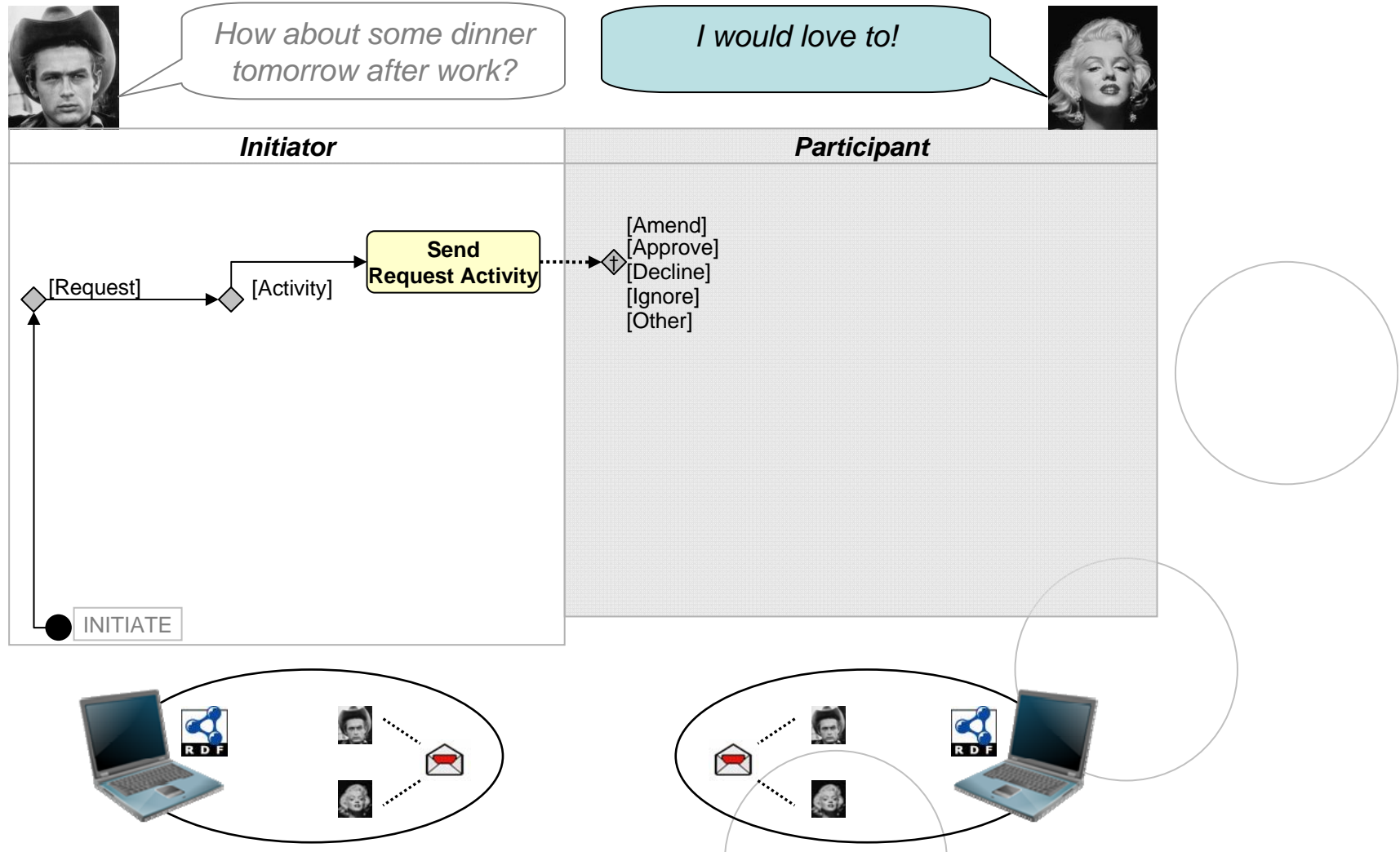
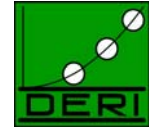
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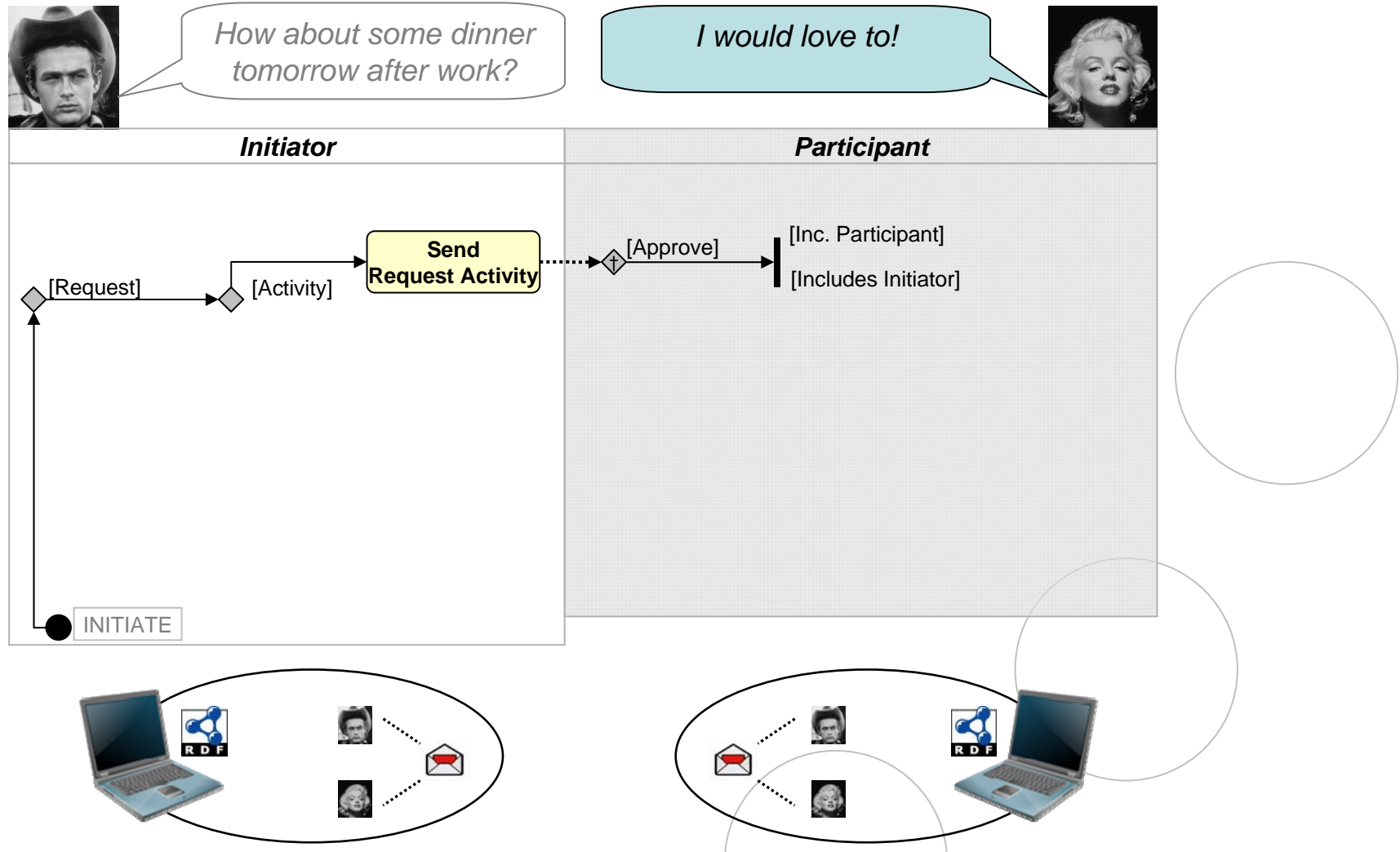
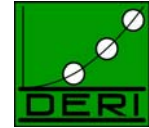
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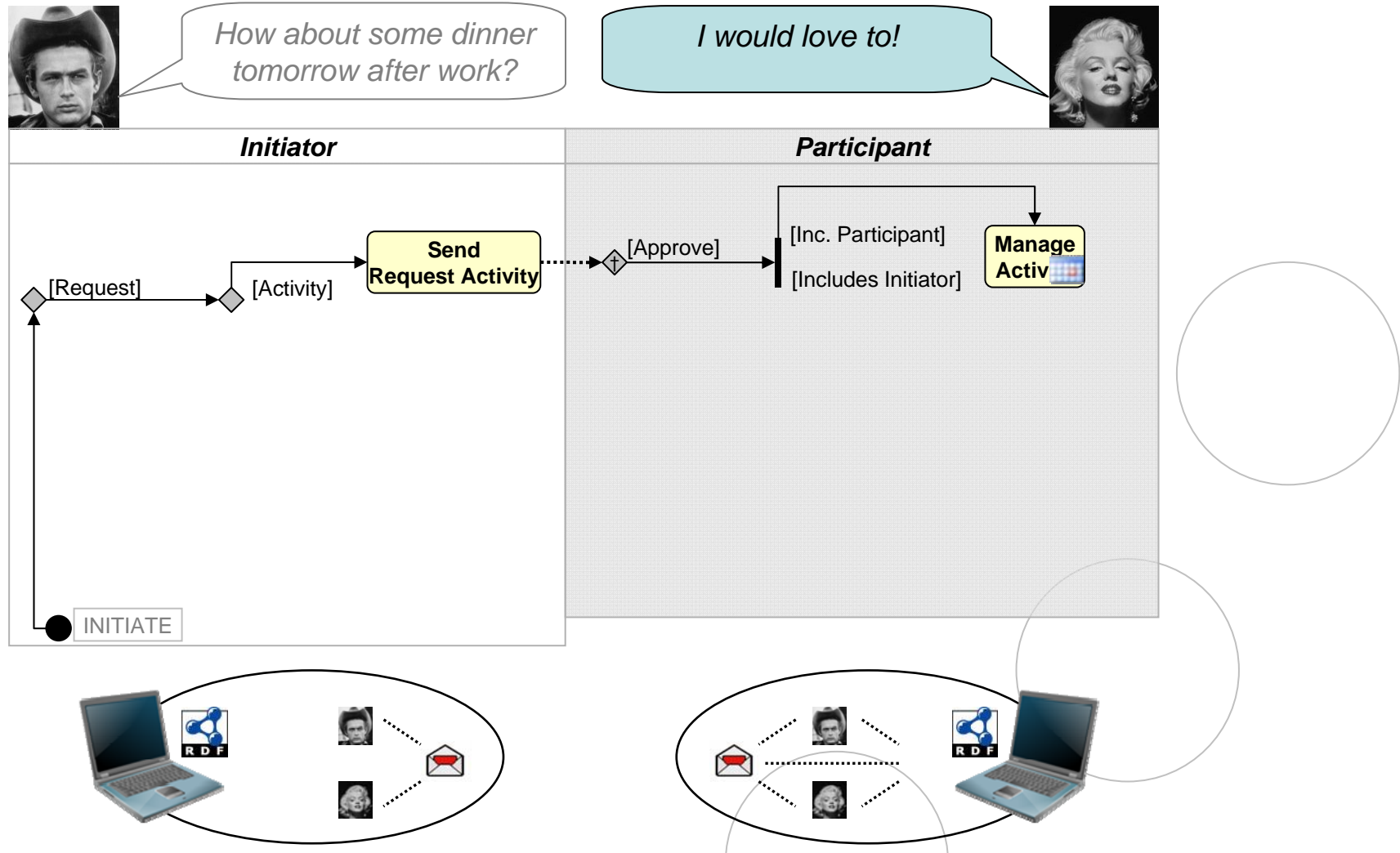
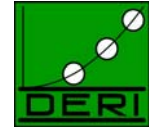
# Workflow Example



# Workflow Example

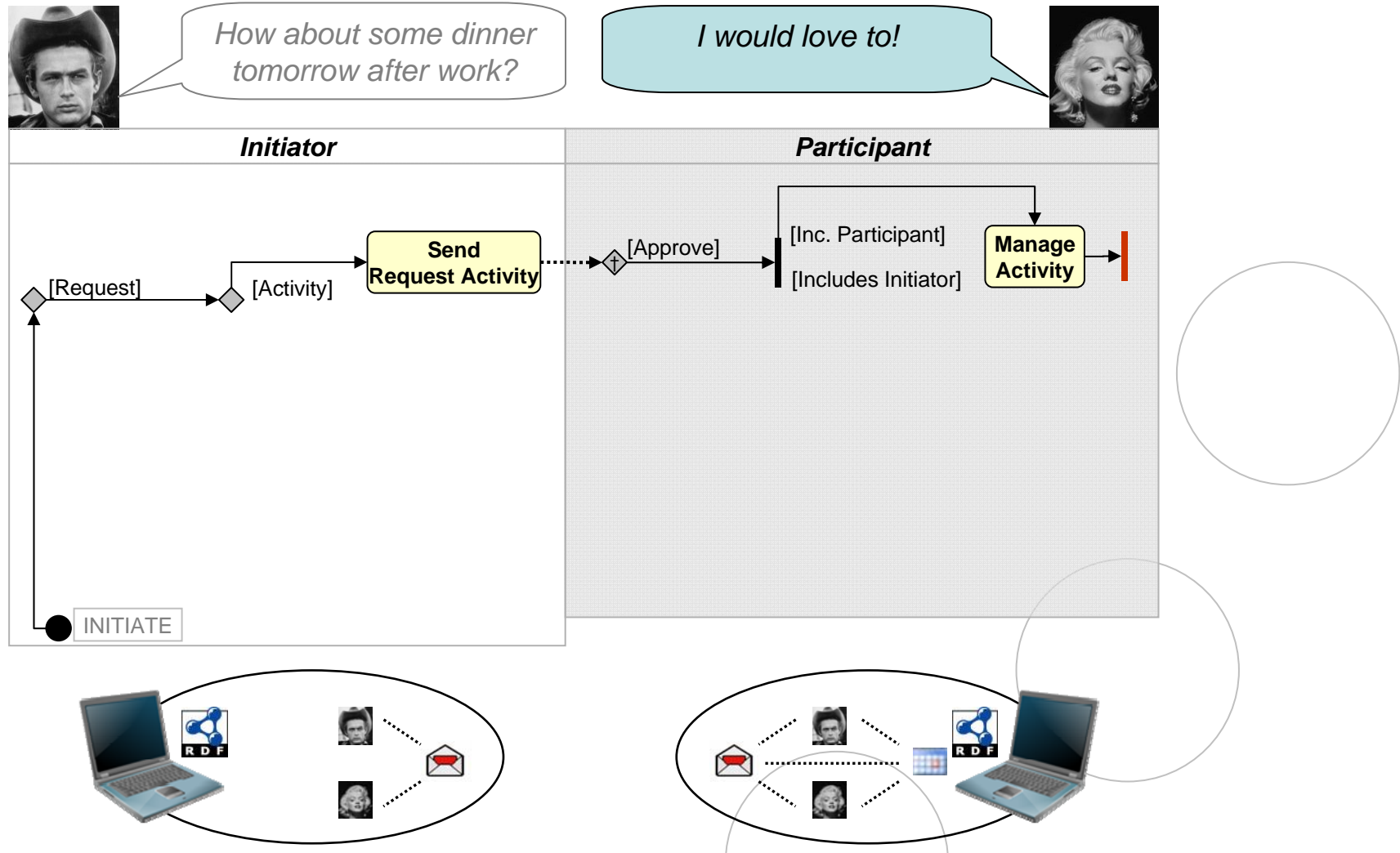
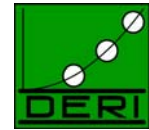


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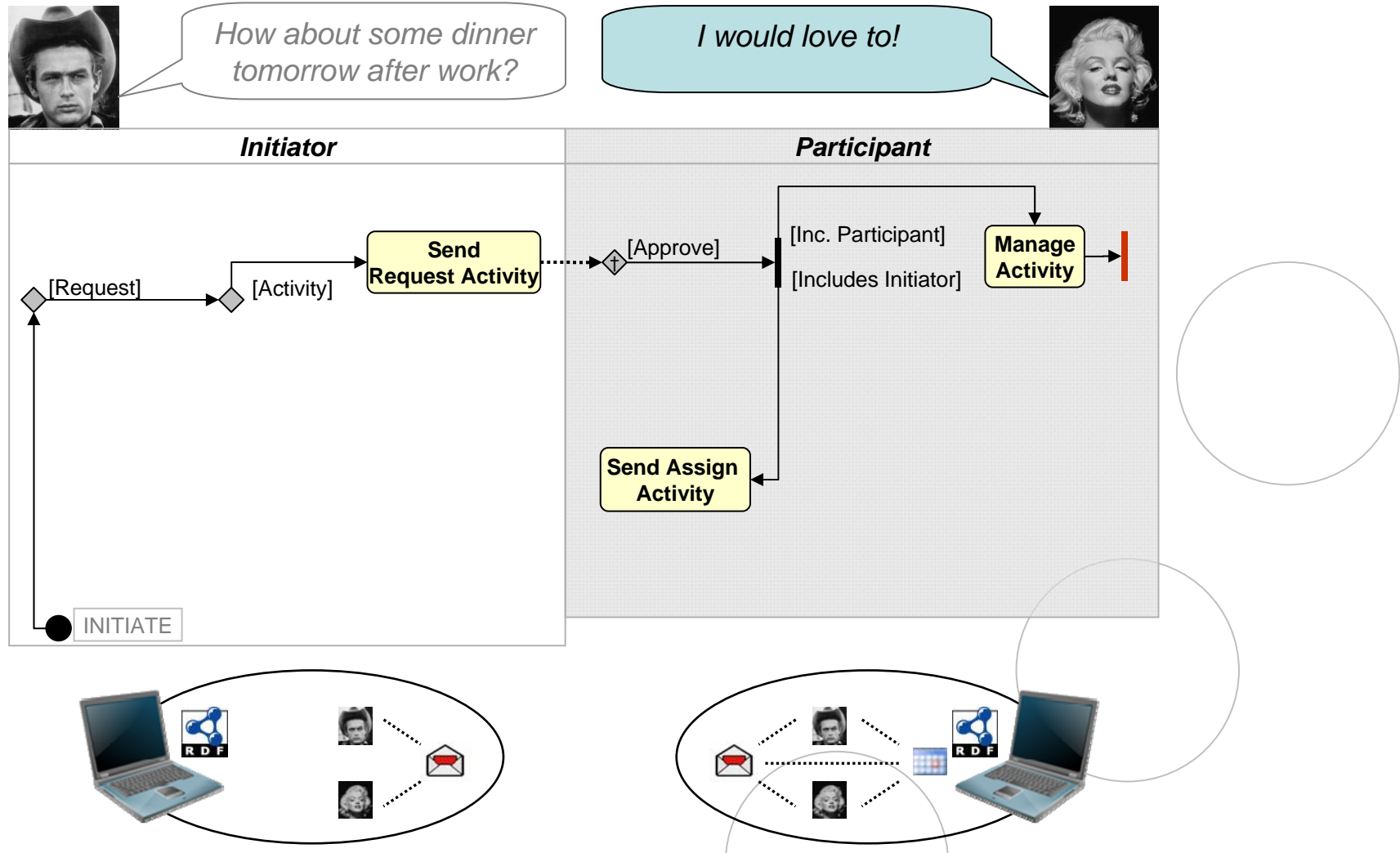
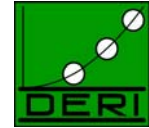




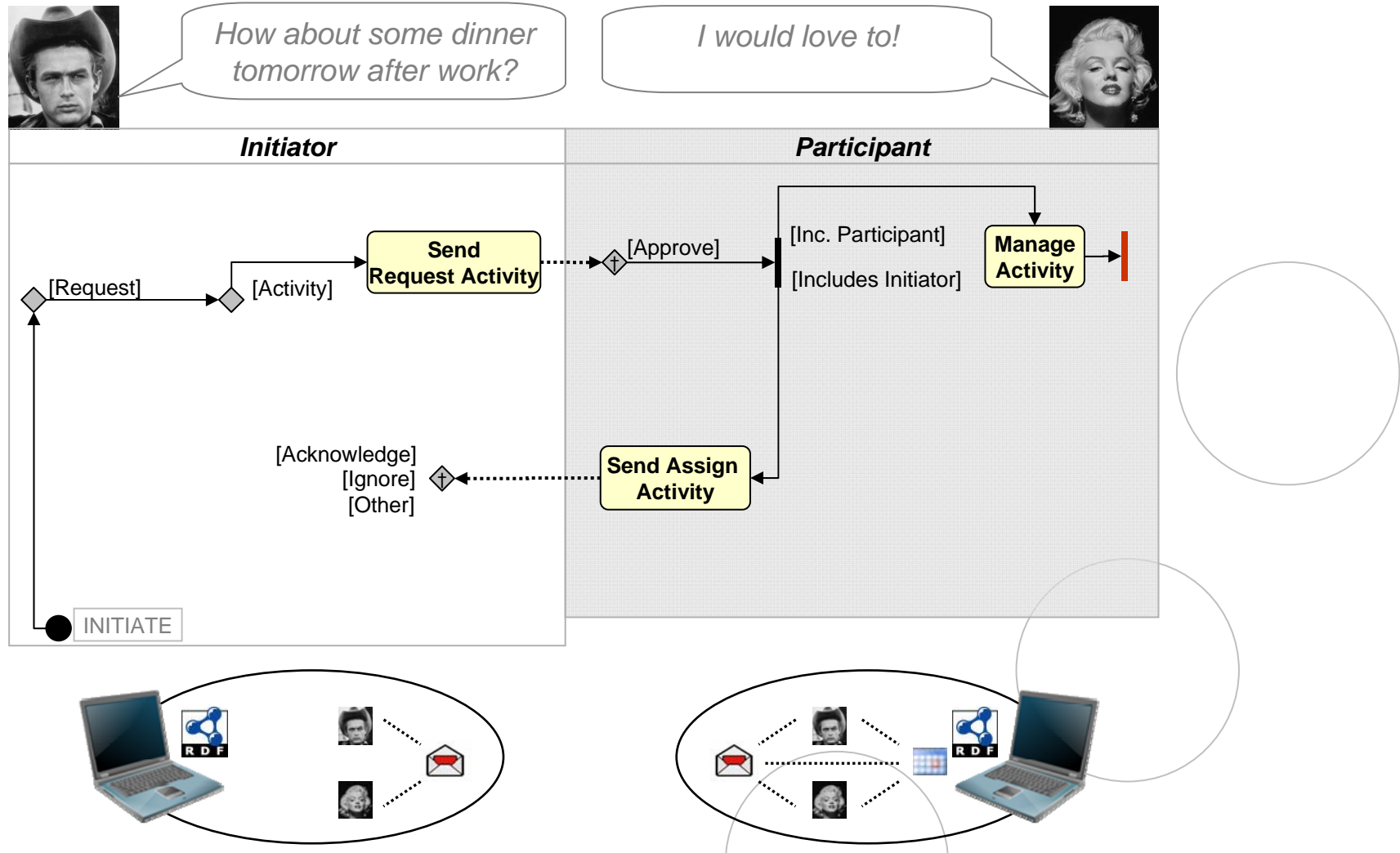
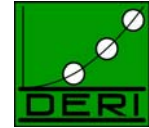
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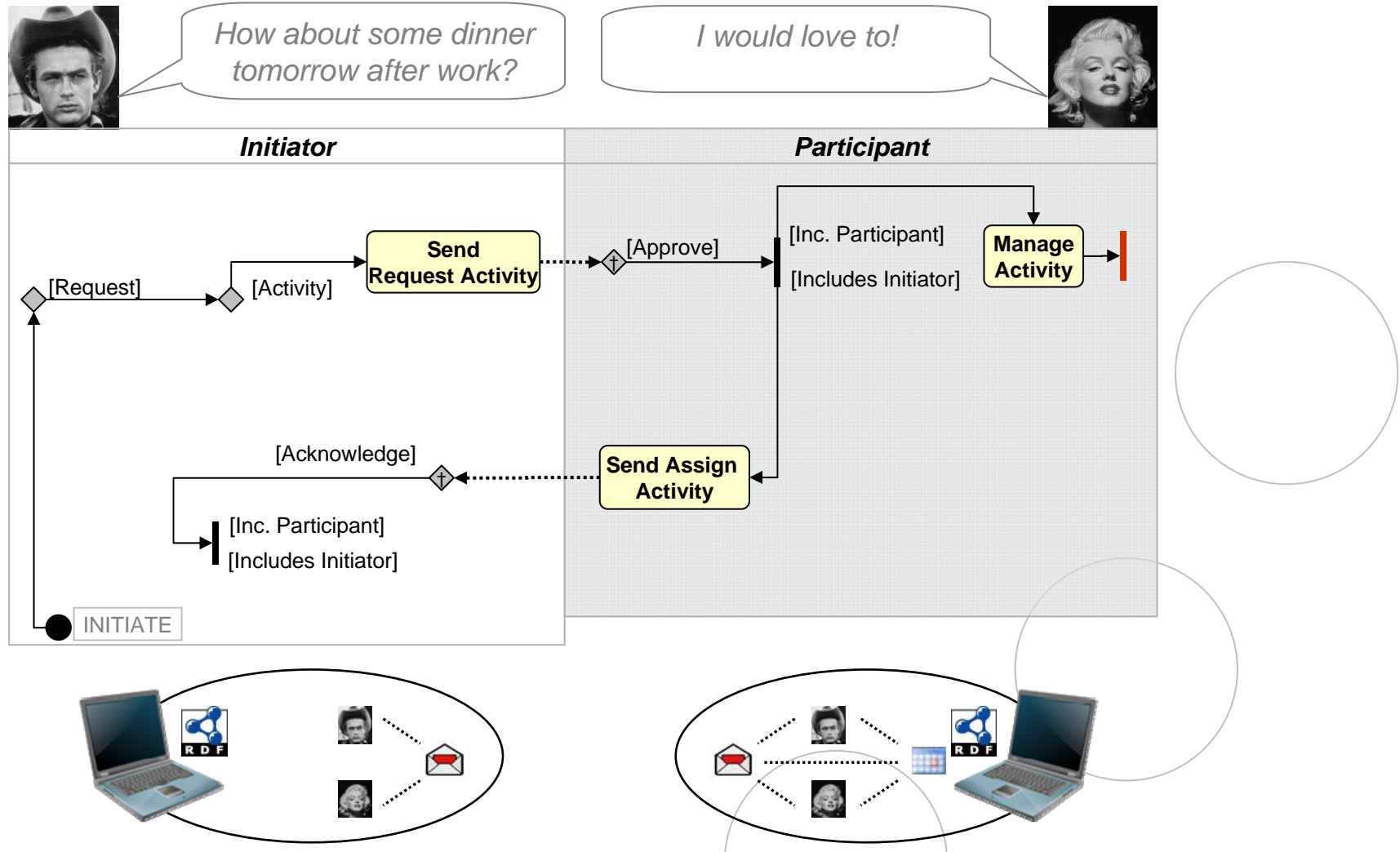
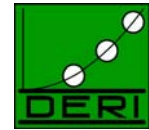
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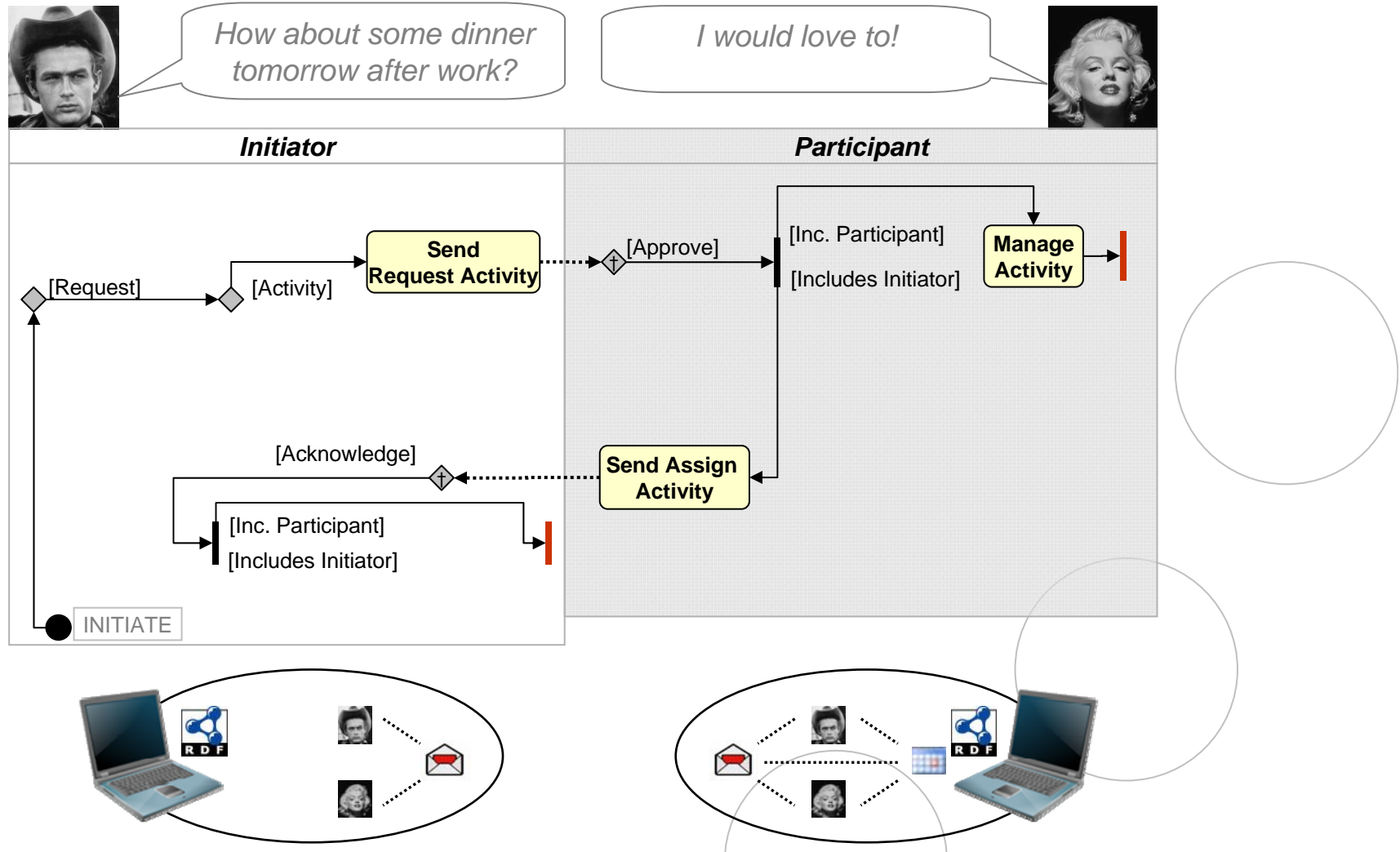
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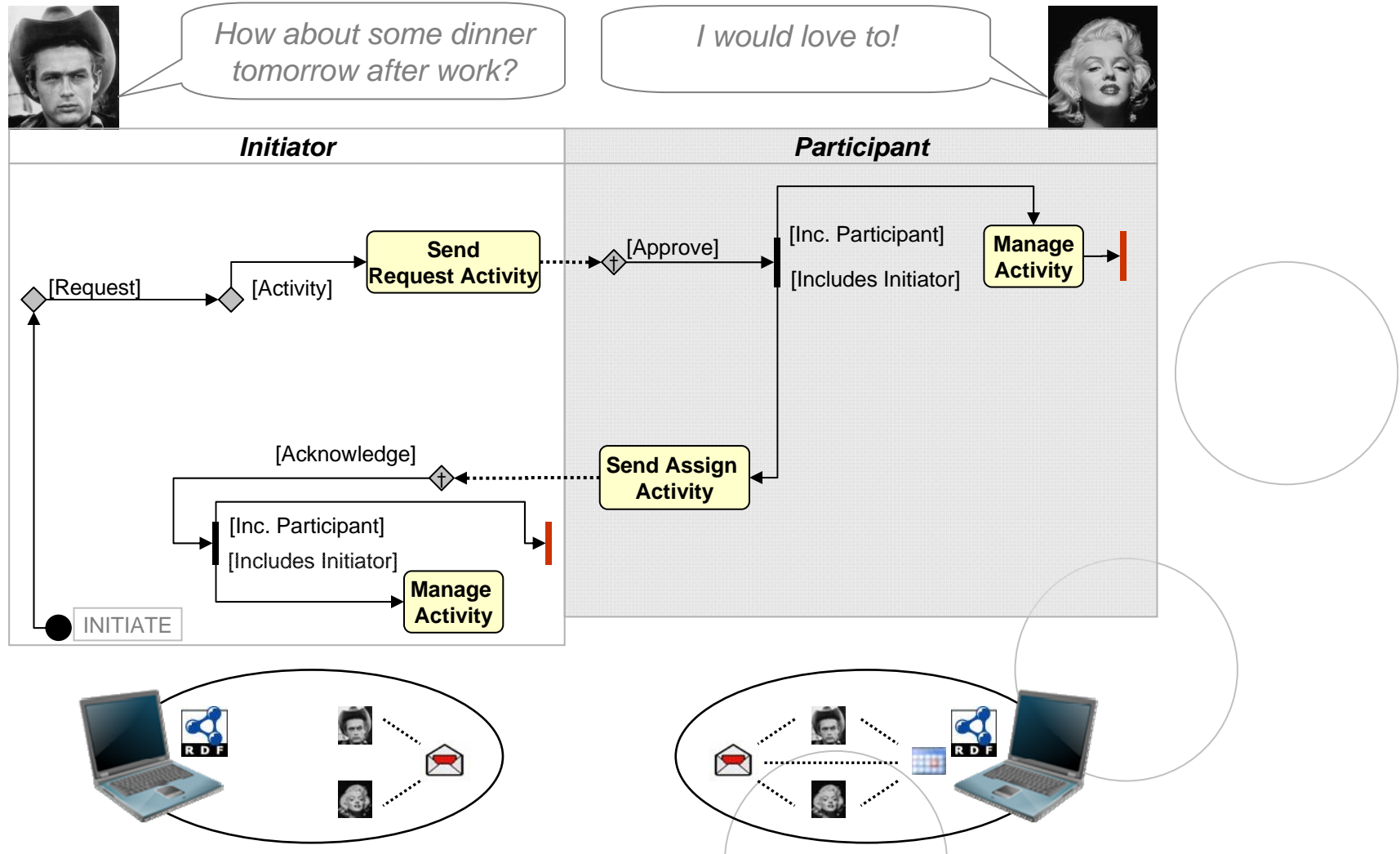
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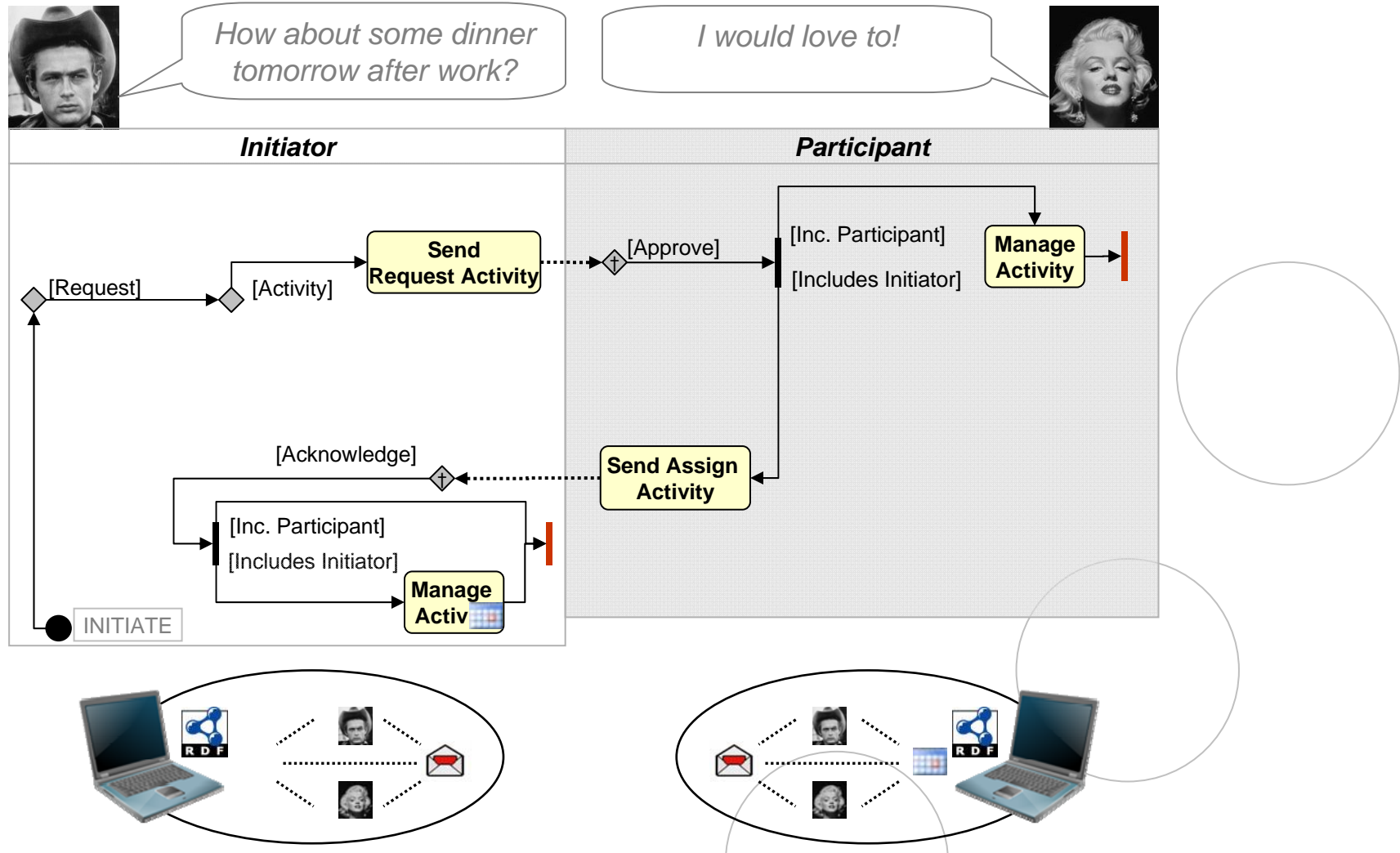
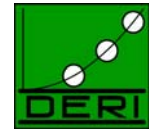
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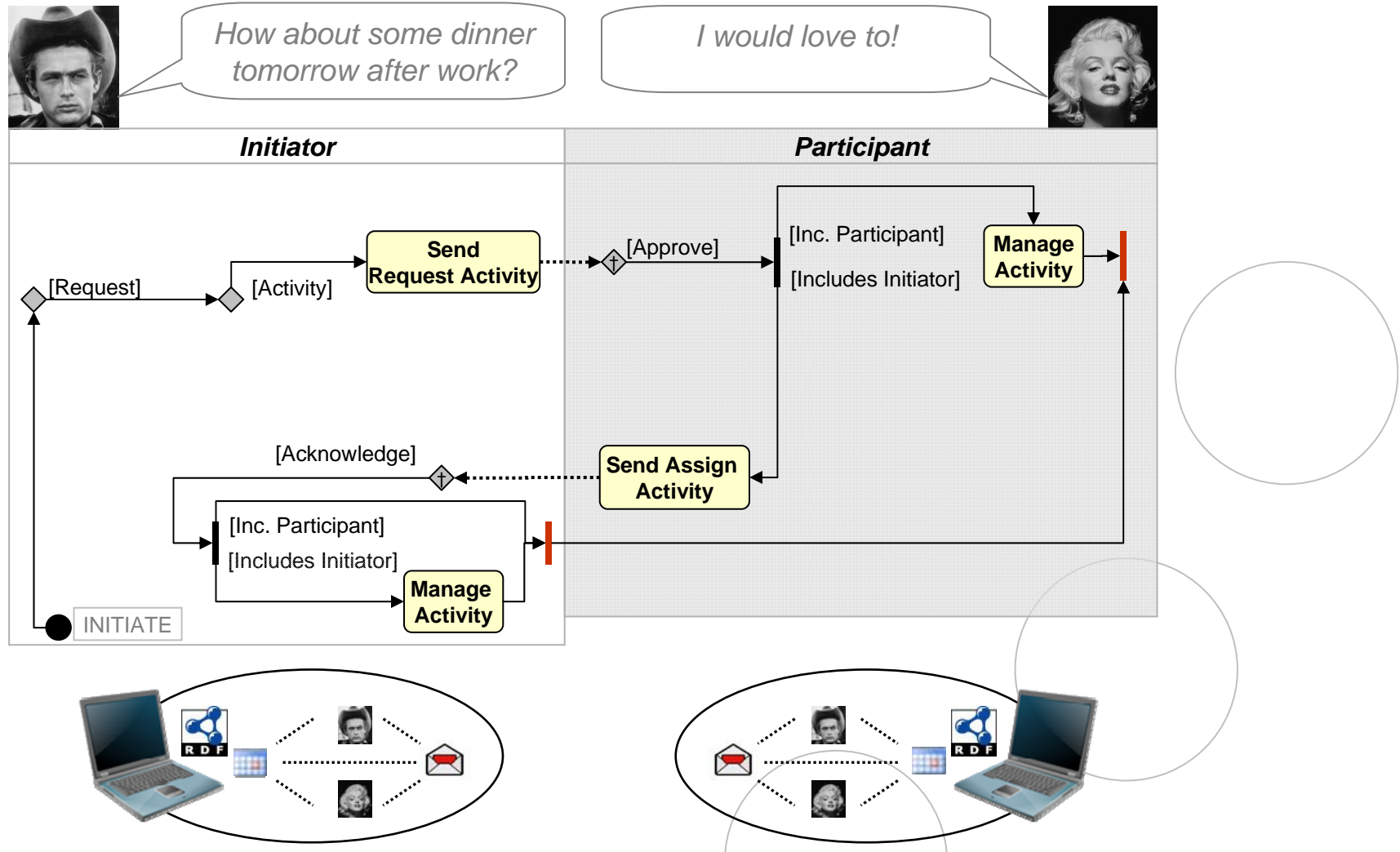
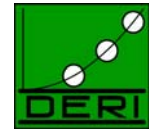
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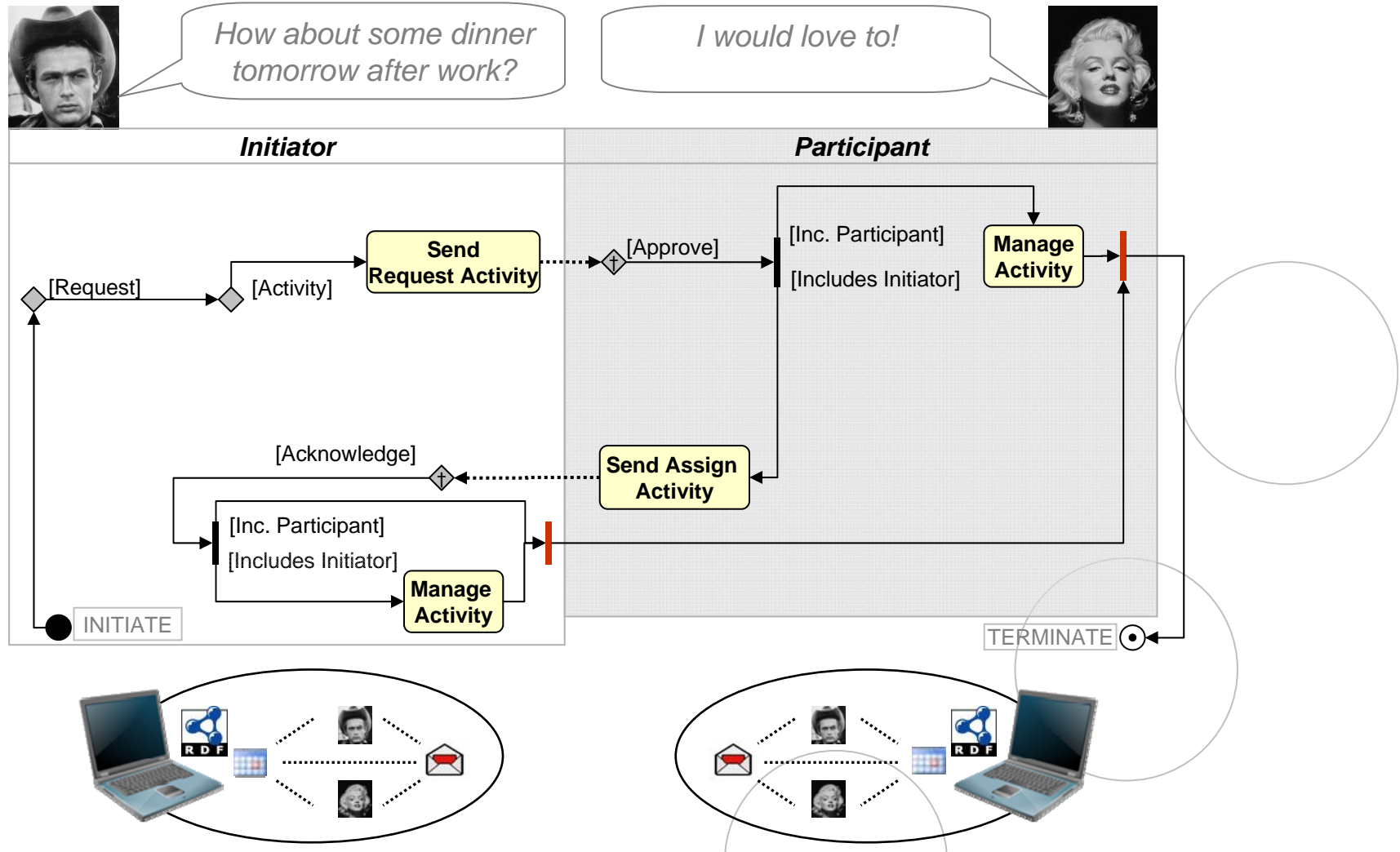
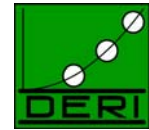


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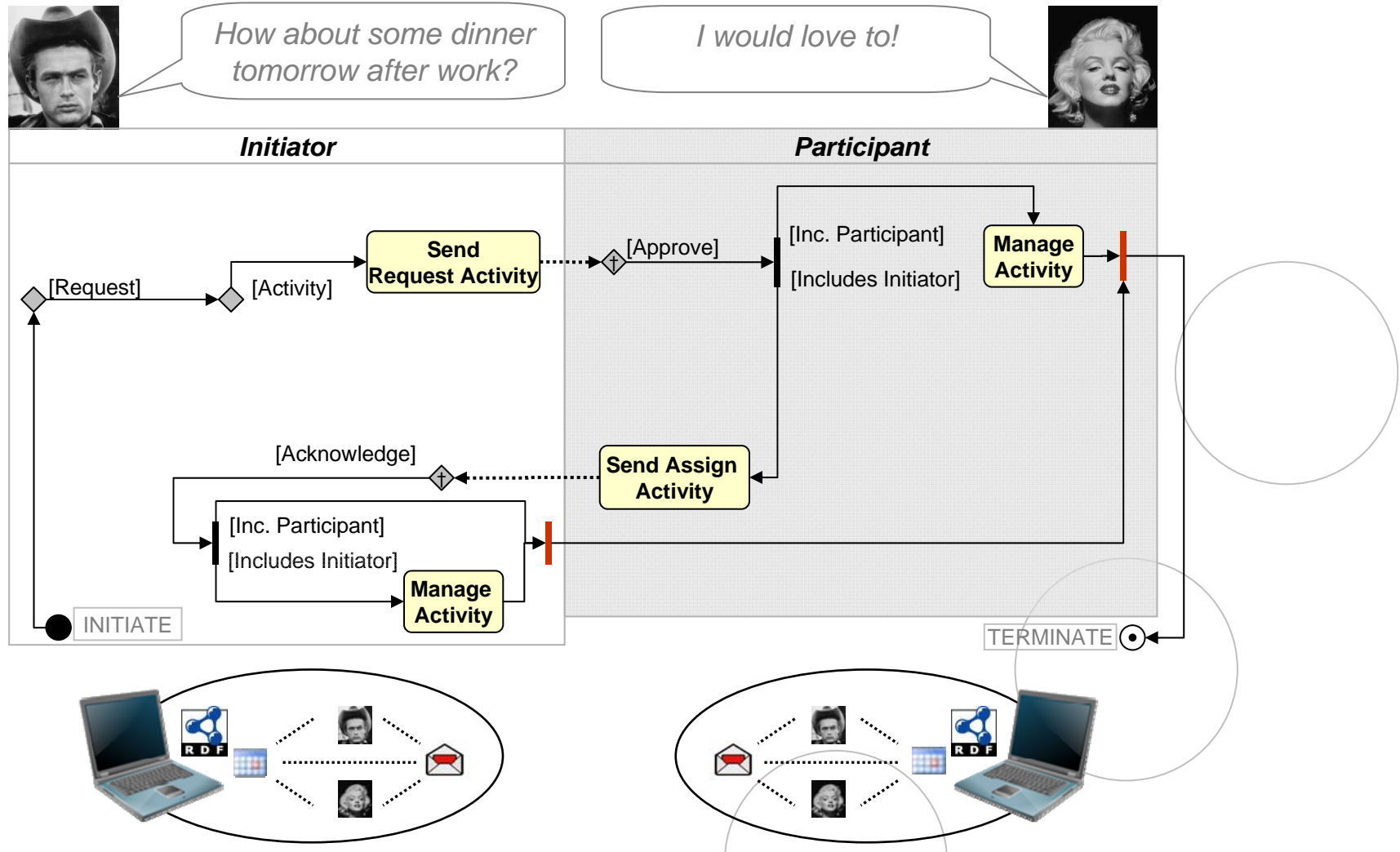
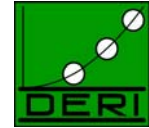




# Workflow Example



# Workflow Example

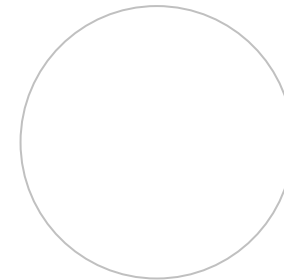
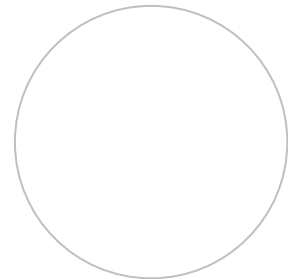
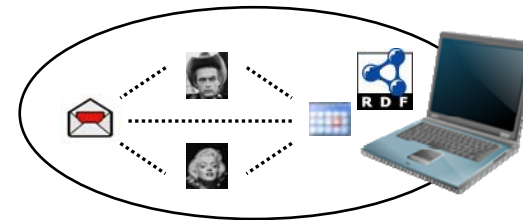
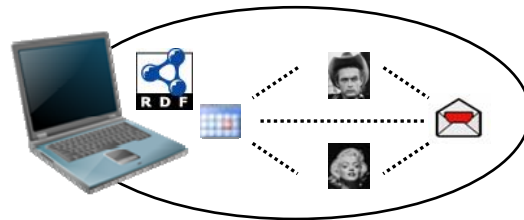


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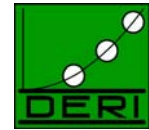


*How about some dinner tomorrow after work?*

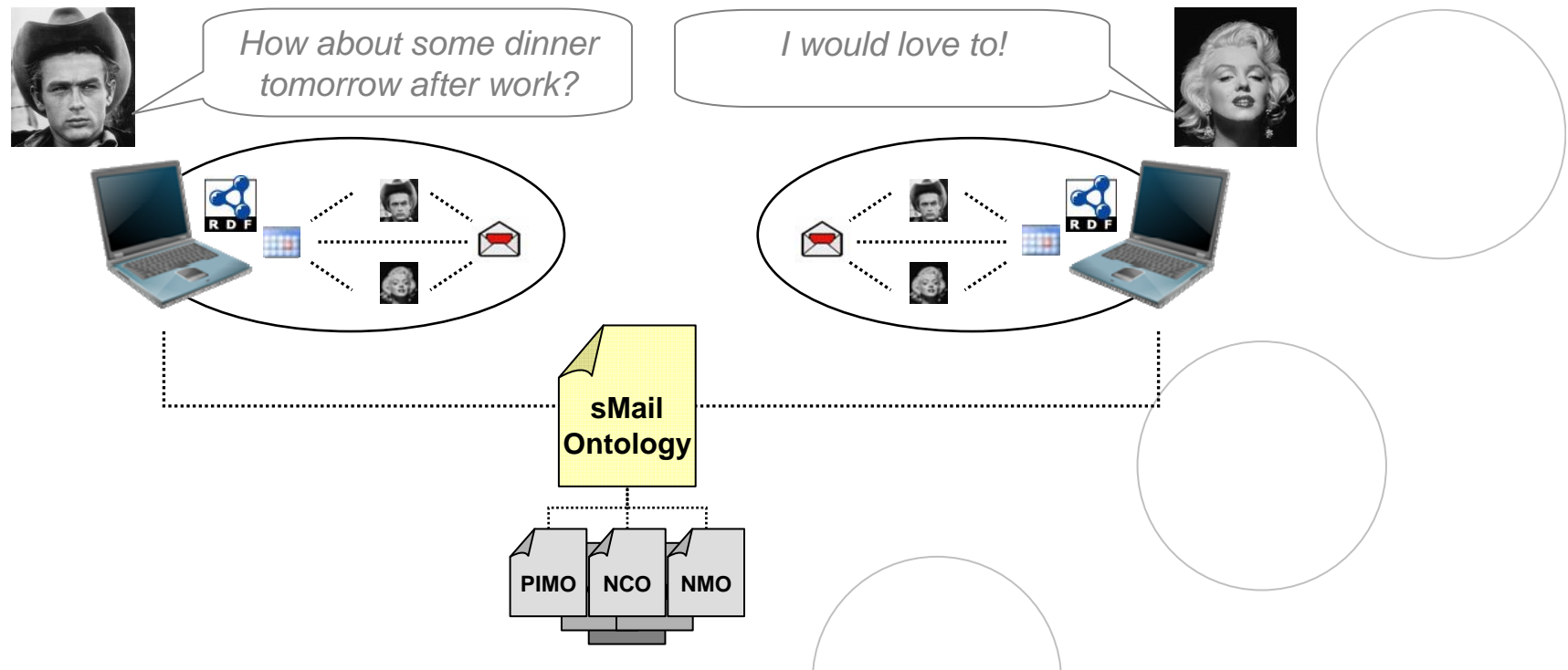
*I would love to!*



# Workflow Example



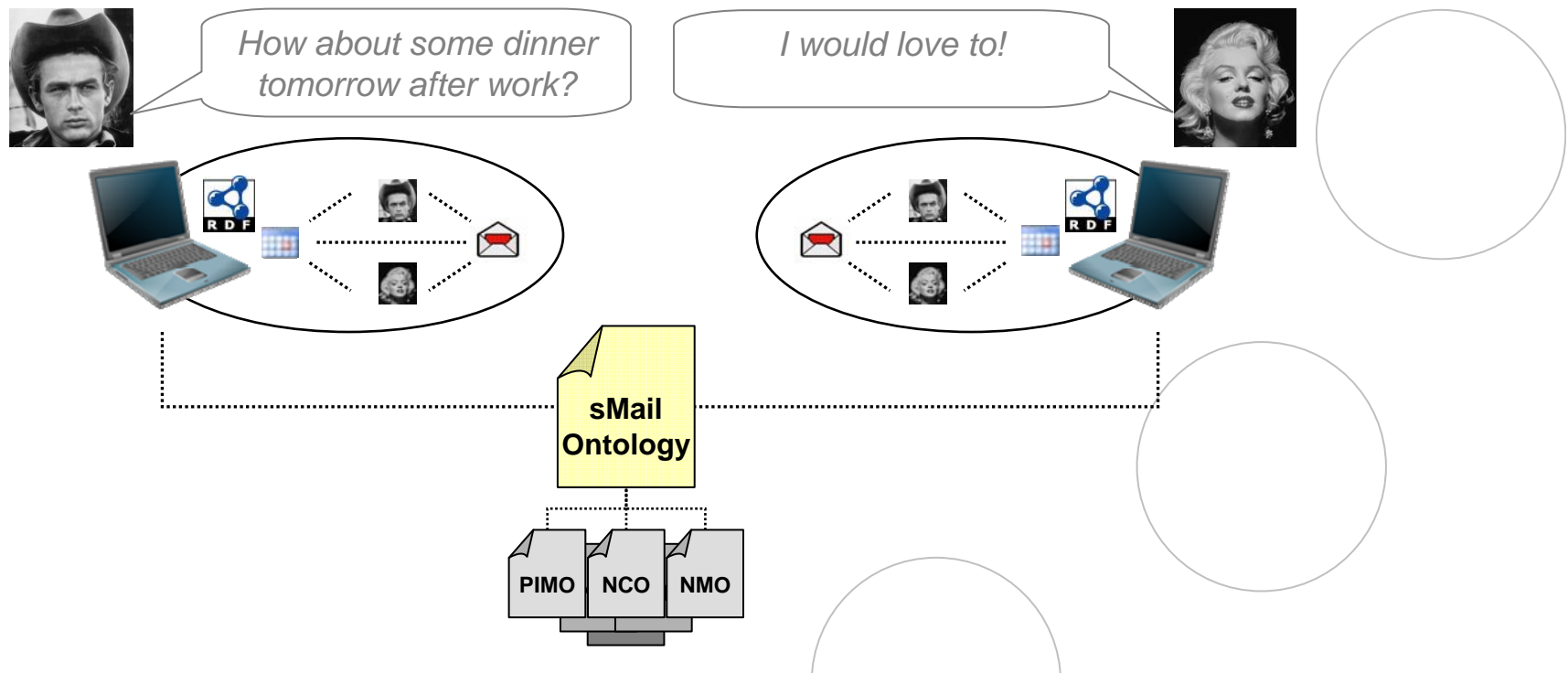
- Knowledge Integration **Within** the Personal Semantic Desktop



# Workflow Example



- Knowledge Integration **Within** the Personal Semantic Desktop
- Data Unification **Among** the Social Semantic Desktops

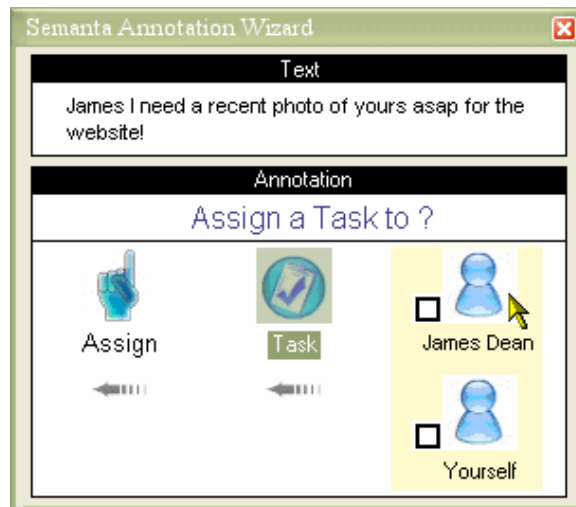


- Applications

- ❖ Email *Tracking*
- ❖ Email *Classification*
- ❖ Email *Retrieval*
- ❖ *Personal Information Management*
- ❖ Email  $\leftrightarrow$  Desktop *Knowledge Integration*



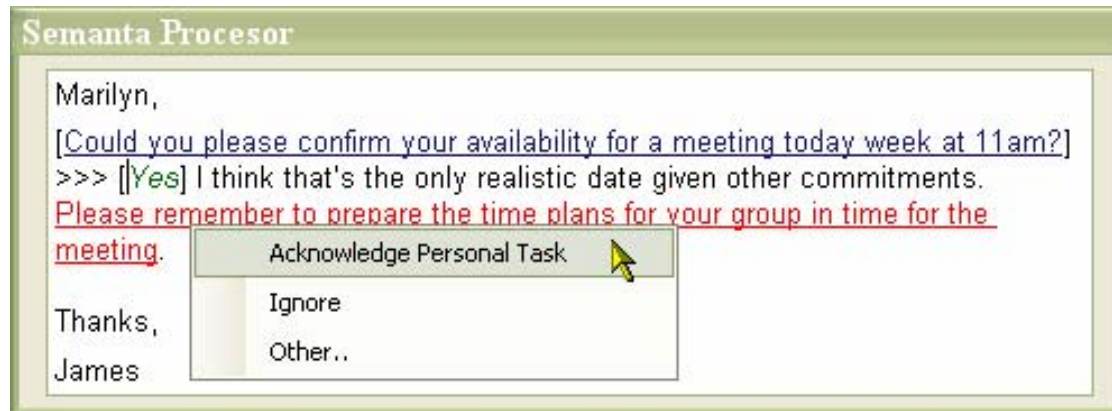
- Semi-automatic Annotation



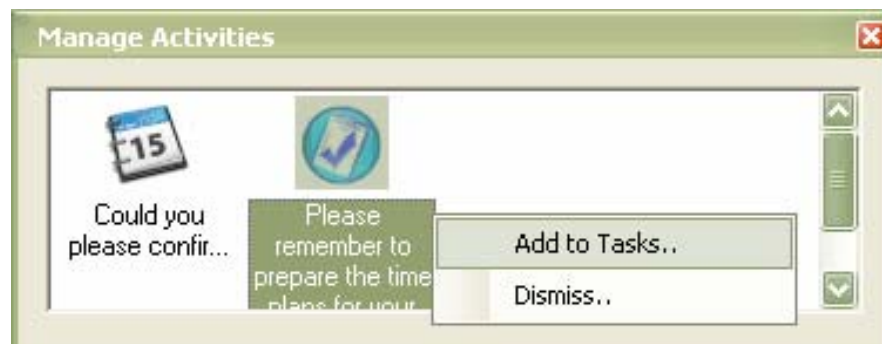
- Email Flagging



- Support for Email Action Items (Annotations)



- Exporting Email Artefacts





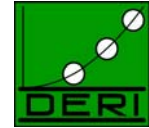
# Future Work



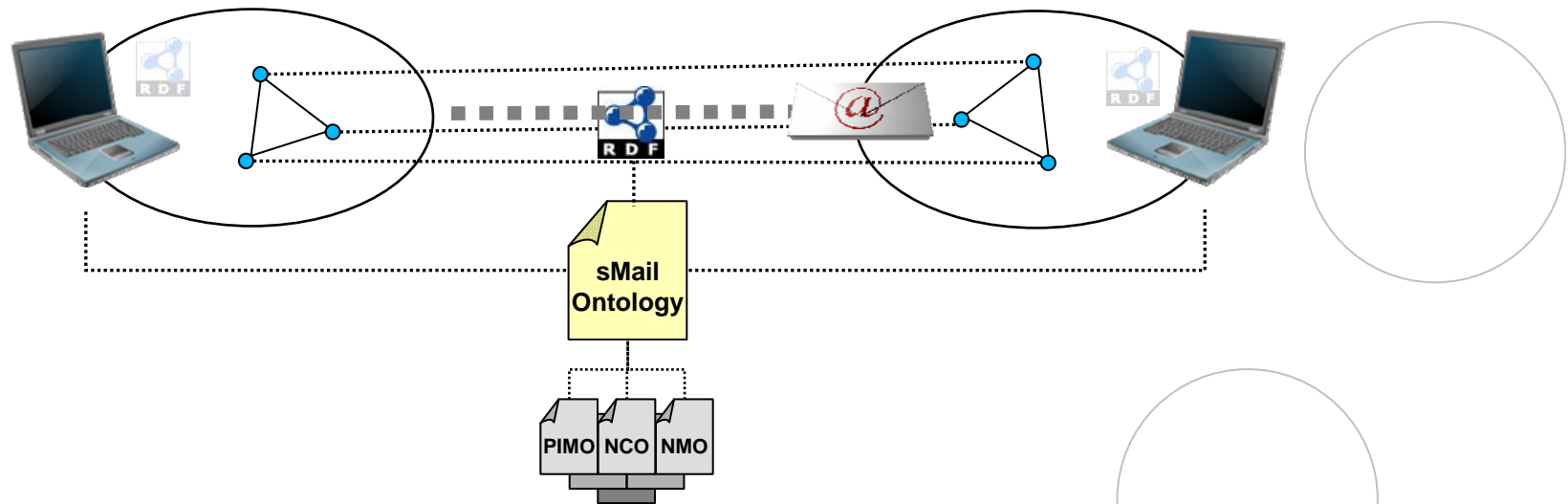
- Extending domain of application to other *Electronic Communication Media* (e.g. Instant Messaging)
- Extending Features – e.g. Social Relationships
- Combining our technology with related and relevant work (e.g. GTD - Getting Things Done)
- Evaluation of Semanta's User Interface



# Conclusion



- The *Social* aspect of SSD depends on *Communication*
- Email's *flexibility* is also the source of *Email Overload*
- **Semantic Email**



- Knowledge Integration *Within* the Personal Semantic Desktop
- Data Unification *Among* the Social Semantic Desktops