



# RAGE

Realising an Applied Gaming Eco-System

## Competence-based Adaptation Asset

T3.4C

created by TUGraz

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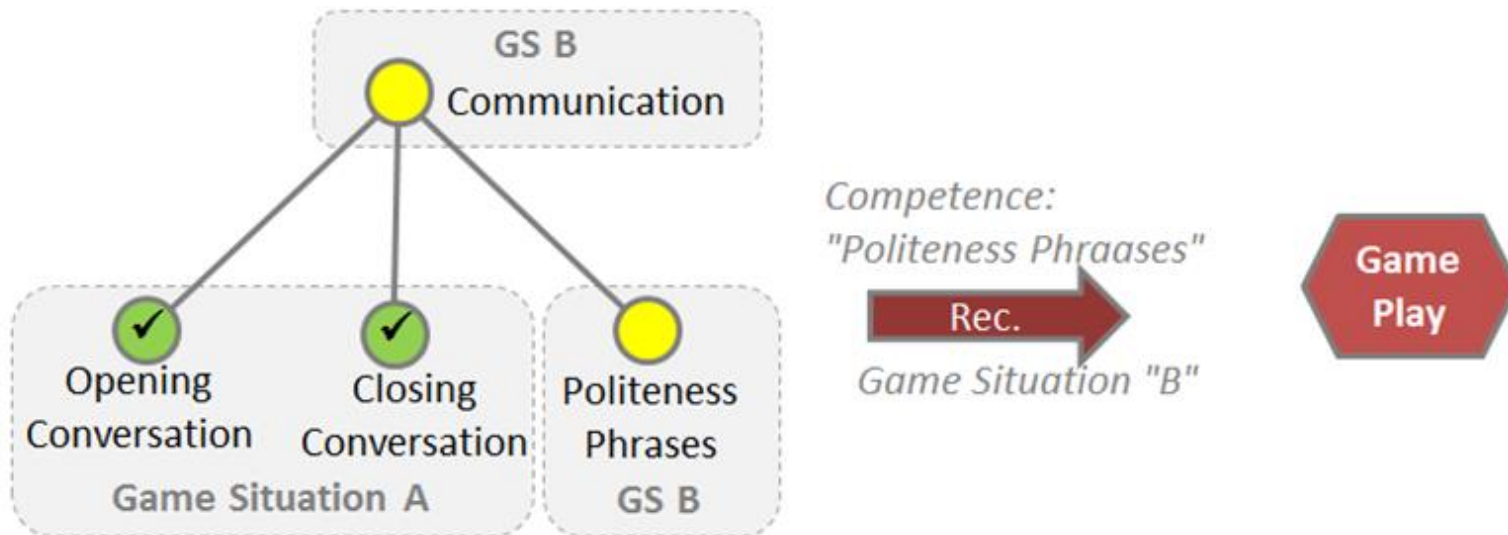


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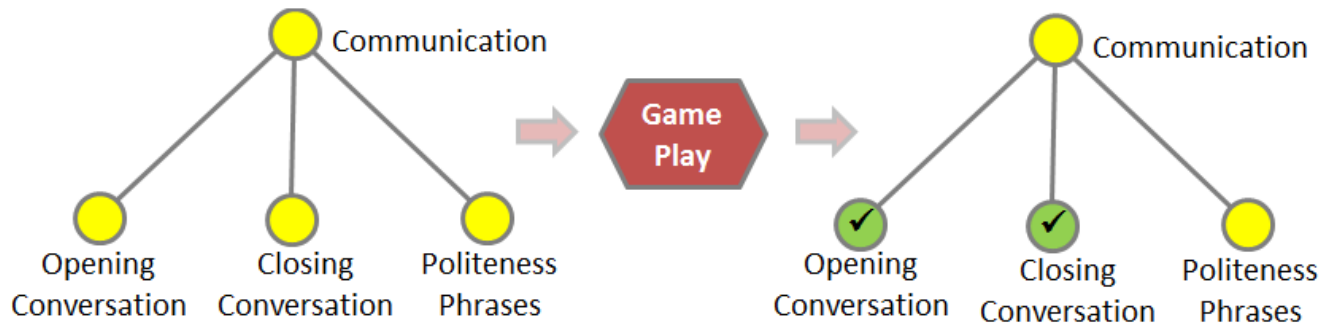
# Overview

- Tool to identify competences and game situations that are meaningful to be tackled next.
- Based on a competence state, next competences to be acquired and related game situations can be recommended.



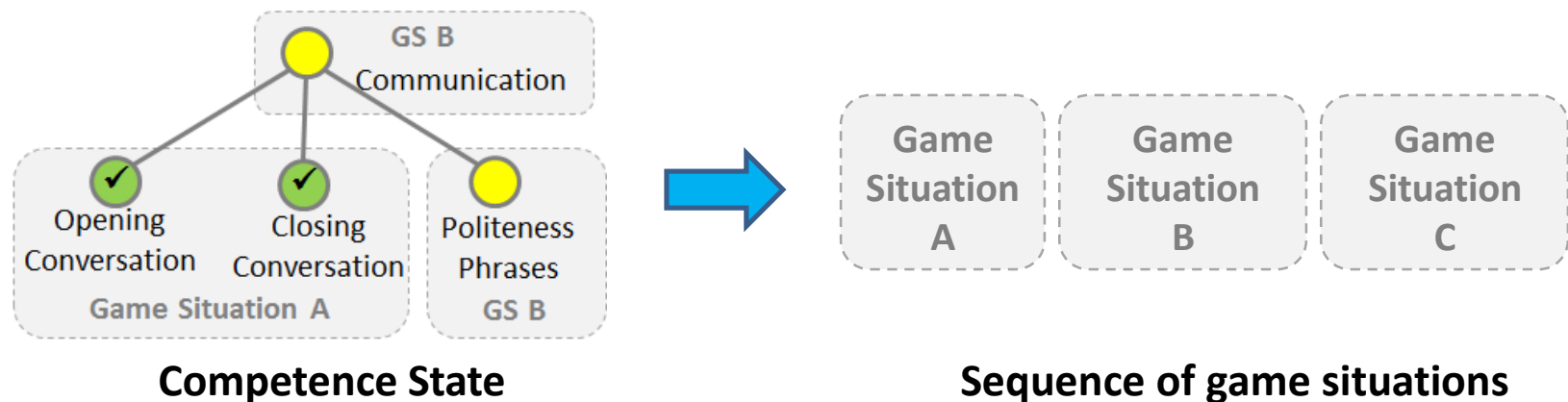
# Idea and Pedagogical Value

- Recommendation of game situations during game play
  - Based on current competence state of the player next meaningful game situations are recommended
- Pedagogical value
  - Optimal learning path adapted to individual competence development



# Asset Concept

- Recommendation algorithm and theory based on Competence-based Knowledge Space Theory (CbKST)
- A domain model specifying and structuring the competences of a domain is the basis for the assessment
- Each game situation (tasks) is assigned with competences
- Based on the current competence state (Competence Assessment Asset) the next game situation is selected/recommended



# Infrastructure / Context

- Implemented as Client side asset
- Loads Domain Model from Domain Model Asset
- Loads competence state from Competence Assessment Asset
- Proposes next meaningful game situations, which are defined in the Domain Model

Needed/Optional Bridges	Needed/Optional Assets
ILog - optional	Domain Model Asset
-	Competence Assessment Asset
-	-

# Integration – Setup

- The asset needs to be created:

```
CompetenceBasedAdaptionAsset cbas = CompetenceBasedAdaptionAsset.Instance;
```

- Furthermore, only the underlying Assets need to be created
  - Domain Model Asset
  - Competence Assessment Asset

# Integration – Usage

- Request the next game situation ID:

```
string nextGameSituationID = cbas. getNextGameSituationId();
```

- Request current game situation ID:

```
string currentGameSituationID = cbas. getCurrentGameSituationId();
```

- Submit performance within game situation (true - success):

```
cbas. setGameSituationUpdate(true);
```

## Why should a game developer use the competence assets?

These assets allow an **easy handling of competences within a game**

- Bringing in a psychological model of competence development into game design
- Competences conveyed by a game can easily be defined, structured, and related to the game and its game situations in advance
- The asset enables personalised learning paths during game play
- The same domain model can be reused and shared across games



# Contact and More Information

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- More information on these assets:
  - <http://css-kti.tugraz.at/projects/rage/assets/>
- Video Demo
  - <http://css-kti.tugraz.at/projects/rage/assets/videos/Demonstration-CompetenceBasedAssets.mp4>