This document outlines the key competency questions aimed at analysing various aspects of academic conferences. Each competency question is accompanied by a description, background data required, and OWL constructs involved, providing a comprehensive understanding of the queries and their requirements.

* **Question**: The competency question that needs to be answered.
* **Description**: Provides a description of the query
* **Background data required**: Specifies whether location and organization information, which is static, is required. The queries may or may not involve this for answering.
* **OWL constructs involved**: Lists the OWL 2 construct that will be involved for reasoning, using ACE ontology available in different OWL 2 profiles.

1. **Trending Topics Across Conferences**
   * **Question**: What are the trending topics across different conferences?
   * **Description**: Keeps users posted on topics trending across conferences.
   * **Background data required**: General conference data, without the need for specific location or organization information.
   * **OWL constructs involved**: Use of ACE ontology for basic data representation and querying.
2. **Active Research Groups**
   * **Question**: Which research groups are active in specific fields?
   * **Description**: Monitor key players and their collaborators in given fields.
   * **Background data required**: Information on research groups, including location and organizational affiliations.
   * **OWL constructs involved**: Includes reasoning with OWL2Bench ontology for detailed analysis of research group activities.
3. **Publication Activities of Organizations**
   * **Question**: What are the publication activities of different organizations?
   * **Description**: Analyze researchers' interdisciplinary work.
   * **Background data required**: Organization and publication data, with static location details.
   * **OWL constructs involved**: Utilizes ACE ontology to track publication records and interdisciplinary collaborations.
4. **Conference Match by Research Interests**
   * **Question**: Which conferences match users' research interests?
   * **Description**: Identifies conferences that match users' research interests.
   * **Background data required**: Research interests of users and general conference topics.
   * **OWL constructs involved**: No specific OWL reasoning required, basic ACE ontology use.
5. **Interdisciplinary Authors**
   * **Question**: Who are the interdisciplinary authors in a specific field?
   * **Description**: Identify potential interdisciplinary collaborations.
   * **Background data required**: Author publication records and research fields.
   * **OWL constructs involved**: ACE ontology with potential OWL2Bench reasoning for detailed author analysis.
6. **Session Popularity**
   * **Question**: Which sessions are the most popular?
   * **Description**: Identify the most popular topics and speakers.
   * **Background data required**: Session attendance and feedback data.
   * **OWL constructs involved**: Basic ACE ontology usage.
7. **Global Research Focus**
   * **Question**: What is the global research focus in a given field?
   * **Description**: Identifies countries most active in a given research field.
   * **Background data required**: Research activity data categorized by country.
   * **OWL constructs involved**: ACE ontology with potential use of OWL2Bench for detailed reasoning.
8. **Funding Organizations**
   * **Question**: Which organizations are funding researchers in a given field?
   * **Description**: Identifies organizations financing researchers.
   * **Background data required**: Funding records and organizational information.
   * **OWL constructs involved**: ACE ontology with OWL reasoning for identifying funding patterns.
9. **Networking Opportunities**
   * **Question**: What are the networking opportunities in a given field?
   * **Description**: Identifies researchers interested in the same given areas.
   * **Background data required**: Researcher profiles and interest areas.
   * **OWL constructs involved**: Basic ACE ontology usage.
10. **Collaboration Networks**
    * **Question**: What are the academic collaboration networks?
    * **Description**: Monitors academic collaboration networks to understand research dynamics.
    * **Background data required**: Data on academic collaborations and networks.
    * **OWL constructs involved**: ACE ontology with OWL2Bench reasoning for network analysis.
11. **Non-academic Collaborators**
    * **Question**: Who are the non-academic collaborators in a given field?
    * **Description**: Monitors industry-academia relations to highlight knowledge transfer.
    * **Background data required**: Information on industry collaborations and non-academic partnerships.
    * **OWL constructs involved**: ACE ontology with potential OWL2Bench reasoning.
12. **Geographical Distribution**
    * **Question**: What is the geographical distribution of research activities?
    * **Description**: Identifies active countries in given research fields.
    * **Background data required**: Geographical data related to research activities.
    * **OWL constructs involved**: Basic ACE ontology usage.
13. **Platform Impact**
    * **Question**: What is the impact of different platforms on conference trends?
    * **Description**: Analyse conference trends on various platforms.
    * **Background data required**: Data from different platforms showing conference trends.
    * **OWL constructs involved**: ACE ontology for data representation and analysis.