**ICT581 Information Systems Principles and Practice**

**Student Name**

**Unit**

**Date**

**Q1. Describe the triggers of the new Conference Coordinator Information System (CCIS)**

**and explain the benefit CCIS would bring. Write in your own words and explain the reasons for each.**

### Trigger of the Conference Coordinator Information System (CCIS)

The inspiration to design the Conference Coordinator Information System (CCIS) stems from the fact that there is a need for a good and efficient process in managing various aspects of an academic conference. Specifically, the CCIS addresses problems with managing paper submission, the peer review process, scheduling sessions during the conference, and final compilation of accepted papers into a schedule and printed proceedings. The first Australasian Conference on Digital Transformation is the initial event requiring this system, which demonstrates the requirement to manage a large number of papers, reviews, and organizational aspects such as authors, reviewers, and participants in the conference.

The prime reason for the CCIS is the complexity of administering a conference with multiple activities such as paper presentation, workshops, invited talks, and social events. The CCIS must automate and make easier processes such as paper submission, reviewer assignment, author communication, paper acceptance/rejection, and generation of conference schedules such that each of these is performed effectively and efficiently.

### Benefit of the Conference Coordinator Information System (CCIS)

The CCIS streamlines a variety of important benefits that will greatly increase the organization of the conference. First, submission and review is made easy. Authors submit their papers online, where the system verifies that every paper satisfies the submission criteria and assigns them to appropriate reviewers based on expertise. The system applies unique identifiers to label each paper, maintaining it anonymous and allowing for an ordered and transparent reviewing process.

Secondly, the system enables automated communication, i.e., sending reminders to reviewers of pending work, notification of paper decisions to authors, and sending confirmation emails for various stages of the process. This reduces administrative overhead and informs all participants across the conference life cycle.

The third important benefit of CCIS is conference schedule management. After the papers are accepted, the editor can just assign papers to tracks, dates, times, and locations, and the system will update these schedules automatically if there are any changes, such as paper withdrawals. By doing this automatically, the CCIS eliminates human error and makes it possible to make last-minute changes without interfering with the overall event planning.

Lastly, the system increases transparency and traceability. With a central review system and tracking of submissions by authors, the CCIS ensures that all information is readily available to the concerned parties, making it easier to monitor progress and make decisions by the conference organizers using updated data.

In brief, the CCIS makes the conference planning process more effective, transparent, and well-organized, to the benefit of all concerned stakeholders—authors and reviewers, organizers, and participants.

**Q2.**

**List the main stakeholders for the CCIS. For each stakeholder, describe their interest**

**in the system and what aspects of it are of particular relevance to them.**

**You do not need to categorize the stakeholders. *Don’t include the systems***

***development team.***

### Stakeholders and Their Interests in the CCIS

**Conference Chair**  
The Conference Chair is among the most critical stakeholders in the system. His/her primary interest is to manage the entire conference process, from paper submission receipt to the final schedule and conference proceedings. The CCIS provides the Chair with tools for controlling the overall process flow, monitoring paper submissions, maintaining review processes on schedule, and generating reports. The system helps the Chair succeed in the conference by automating mundane work such as sending reminders to reviewers and authors and generating the final conference proceedings and program. The Chair is particularly interested in having the CCIS aid in providing the most current, most precise, and most convenient status information concerning the submissions, reviews, and final decisions.

**Conference Editor**  
The Conference Editor has ultimate responsibility for acceptance decisions and plays an important role in the reviewing process. The Editor is especially concerned with monitoring submissions, reviewer feedback, and paper status. The CCIS makes it easier for the Editor to review and make decisions based on reviewer feedback, paper quality, and timeliness of the conference. The value this system provides in its capacity to automatically match reviewers with papers according to expertise and to automatically generate review reminders are particularly beneficial to the Editor. The ease of being able to prepare the list of accepted papers to include in the final conference proceedings is a very timely feature.

**Review Committee Members**  
Reviewers are significant stakeholders in the assessment of papers. Reviewers are responsible for examining submitted papers based on predetermined criteria. Reviewers' interests in the CCIS include the fact that it is capable of assigning papers based on their specialty, tracking papers they are reviewing, and submitting reviews within provided time limits. Automated reminders and easy review submission forms in the system are significant to help them keep pace. Reviewers are also made easy by the anonymity provided by the CCIS, allowing the review process to be fair and impartial. They must be able to view all paper information available, including the title, abstract, and keywords, so that they can review the paper appropriately.

**Authors**  
Authors are one of the most important groups of stakeholders in the CCIS because they are the ones who submit papers for review and potential inclusion. Their interest is primarily in terms of submitting papers, where they expect an intuitive interface to upload their papers and all the necessary information (e.g., title, authors, abstract, keywords). Authors also utilize the facility of automatic notifications available through the system that inform them about submission status, reviewer comments, and conclusiveness (accepted, rejected, or accepted after some changes). On acceptance, authors can even use the system to upload their final, camera-ready version. For authors, early and unambiguous communication in all phases is absolutely critical, which the CCIS helps bring about by updating them at every phase.

**Conference Attendees**  
Participants need to have access to a consistent and complete conference schedule and proceedings. Their first priority is being able to look up session information, including paper titles, abstracts, and session times. The CCIS assures that the conference schedule will be consistent, accurate, and updated when it is required (for example, when documents are withdrawn by authors or when sessions are changed). Participants also need to have an overview of the papers, which is included in the conference materials. For the participants, the utility of the CCIS is to offer easy access to the conference program and announcements on the schedule.

**Institutional Representatives**  
Representatives of institutions, such as universities or research institutions, are interested in the success of the conference and the visibility of the papers presented by researchers from their institution. Their interest in the CCIS is tracking the status of papers presented by authors from their institution and ensuring that they are correctly attributed in the final proceedings. The system's ability to track authors and affiliations and include author data within conference publications is most valuable to these groups. They also have an interest in transparency and fairness in the review process, and the CCIS's automatic monitoring and reporting features help to ensure that these factors are kept in place.

To the point, the CCIS system satisfies a diverse range of stakeholders with different interests consistent with the capability of the system to facilitate paper submission, review, communication, and event scheduling. The effective processes and automated functions of the system allow it to suit the different needs of each stakeholder and thus help in conducting the conference effectively.

**Q3. (a) List and briefly describe the main functional requirements for the CCIS.**

**(b) List and briefly describe the main nonfunctional requirements and additional requirements (if any) for the CCIS.**

### (a) Functional Requirements for the CCIS

**Paper Submission**  
The system must allow authors to submit papers through an online interface. This includes typing in their information (e.g., name, title, institution, email), uploading the paper in a specified format (PDF), and typing in metadata such as the title of the paper, abstract, and keywords. The system must also anonymize papers, meeting the submission requirements of the conference.

**Reviewer Assignment**  
The system should allow the editor to assign documents to appropriate reviewers based on their area of expertise. Reviewers can select up to three tracks they can review documents for, and the system must utilize these to match documents against reviewers.

**Paper Review Process**  
The CCIS must provide a review management system wherein reviewers can see submitted manuscripts, review them based on pre-established criteria, and submit their reviews. The system should remind reviewers in case they have not submitted their reviews within the time specified.

**Paper Status and Notifications**  
The system must track the status of each paper, for instance, under review, accepted, or rejected. Both authors and reviewers must be notified automatically via email about status updates in their submissions, for example, submission acknowledgment, review reminders, and final decisions.

**Conference Schedule Creation**

After accepting the papers, the system must allow the editor and conference chair to build and modify the conference program. The editor assigns accepted papers to tracks, dates, times, and venues, and the system must update the program in real time as changes are made (i.e., when authors retract their papers).

**Final Paper Submission and Camera-Ready Version**  
The system needs to allow authors of accepted papers to upload the final camera-ready version of their paper. The authors need to be able to resubmit revised papers for review in the event revisions are required prior to final acceptance.

**Paper Summary Generation**

The system must be capable of auto-generating a summary of all accepted papers, with the paper title, authors, and abstracts. The summary forms part of conference material handed out to participants.

**Track Management**  
It should be capable of holding all tracks for conference topics and allowing selection of preferred tracks by the reviewers so that they can review the papers. It makes paper assignment to appropriate reviewers and correct categorization into conference sessions possible.

### (b) Non-Functional Requirements for the CCIS

**Performance**  
The system must be able to function properly under heavy loads, especially during peak submission hours. It must handle large numbers of concurrent users (writers, reviewers, and administrators) without loss of function. Response time for critical functions, such as paper submission and schedule generation, must be low.

**Security**

Keeping in view the sensitive nature of paper submission and anonymity of the reviewing process, the system must be secure. Encryption of author data, paper submissions, and reviewer feedback to ensure confidentiality of data is included. Different sections of the system should be accessible role-wise, and users should see only data related to their assignment.

**Scalability**  
The CCIS should be scalable to support future conferences and more users. This involves the ability to manage more submissions, reviewers, and attendees as the number of conferences and participants grows. The system can be horizontally scaled if necessary, without extensive restructuring.

**Usability**

The system must be intuitive with an easy-to-use interface that can be easily used by all the users (authors, reviewers, and conference organizers). The system must give good instructions and feedback to assist the users in going through the submission, review, and scheduling process.

**Reliability**  
The system should be extremely reliable with little downtime, particularly during peak times like the paper submission deadline, review deadlines, and conference schedule generation. Downtime should be kept to a minimum and made known to users.

**Maintainability**

It should be easy to upgrade and maintain. The design should enable easy modification for the addition of new features, error correction, and enhancement based on user feedback.

### **Additional Requirements**

* **Automated Email Reminders**

**Automated email reminders of impending deadlines and tasks should be sent to reviewers by the system. System-generated emails should also be sent to authors in order to update them on the status of paper submissions and reviews.**

* **Accessibility**

**The system should be accessible to disabled users, adhering to web accessibility standards. This will ensure that all users, regardless of their physical abilities, are able to submit papers, review them, and read the conference proceedings.**

* **Data Recovery and Backup**

**The system must include data backup and recovery facilities to prevent loss of data in the event of system failure. This is important in maintaining the integrity of paper submissions, reviews, and the final conference schedule.**

**In summary, the functional requirements are utilized to ensure that all the submission of paper, review, and conference planning activities can be performed in the system, whereas non-functional requirements ensure that the system operates effectively, securely, and efficiently for the various stakeholders. Additional requirements like email reminder, accessibility, and backup operations provide the system with additional robustness to its design.**

Q4. **(a) Use the User Goal technique to develop a list of use cases for the CCIS.**

**Present your list in a table that includes the participating actors, use case name**

**and brief use case description.**

**(b) Use the Event Decomposition technique to identify any additional use cases for the CCIS. These will probably be temporal and state event types. Present**

**your list in a table that includes the event, type of event, use case name, and**

**brief use case description. You do NOT need to repeat the use cases you**

**identified in (a) here.**

### (a) Use Goal Technique – List of Use Cases for the CCIS

User Goal approach is all about determining the activities or goals users are looking to achieve through the system. Below is a table with actors involved, use case names, and brief descriptions as outlined in the CCIS case study.

| **Actor** | **Use Case Name** | **Use Case Description** |
| --- | --- | --- |
| **Author** | Submit Paper | Authors submit their paper by filling out an online form, providing necessary metadata (title, abstract, keywords) and uploading the paper in PDF format. |
| **Reviewer** | Review Paper | Reviewers are assigned papers and assess them based on predefined criteria, submitting their reviews via an online form. |
| **Editor** | Assign Reviewers | The editor assigns submitted papers to suitable reviewers based on their expertise and the track selections. |
| **Editor** | Assess Reviews | The editor reviews feedback from multiple reviewers and makes a decision on paper acceptance or rejection. |
| **Editor** | Create Conference Schedule | After paper acceptance, the editor manually assigns accepted papers to tracks, dates, times, and venues for the conference. |
| **Editor** | Finalize Conference Proceedings | The editor compiles the final list of accepted papers, generating the schedule and published proceedings document. |
| **Author** | Submit Camera-Ready Version | Authors of accepted papers submit the final, camera-ready version of their papers for inclusion in the conference. |
| **System** | Notify Author of Decision | After paper review, the system sends an email to the corresponding author to notify them of the paper's acceptance, rejection, or conditional acceptance. |
| **System** | Send Reviewer Reminders | The system automatically sends reminders to reviewers who have not submitted their reviews within the given timeframe. |
| **Attendee** | View Conference Schedule | Attendees can access and view the conference schedule with session details, paper titles, authors, and venue information. |
| **System** | Generate Paper Summary | The system generates a summary of all accepted papers, including title, abstract, and authors, which is included in the conference materials. |

The User Goal method defines the top-priority tasks or goals various actors (e.g., authors, reviewers, editors, participants) have to accomplish using the CCIS. The use cases highlight user interactions and outcomes, e.g., paper submission, paper review, track allocation, and timetable completion.

### (b) Event Decomposition Technique – Additional Use Cases for the CCIS

The Event Decomposition method specifies use cases as events particular to the occurrence in the system. These events may be state-based (based on the change in system state) or temporal (time). Here is a table with additional use cases specified using the Event Decomposition method.

| **Event** | **Type of Event** | **Use Case Name** | **Use Case Description** |
| --- | --- | --- | --- |
| Paper submission deadline passed | Temporal | Reject Late Submissions | The system automatically rejects any paper submitted after the submission deadline and sends an email notification to the corresponding author. |
| Review period ends (three weeks) | Temporal | Send Final Review Reminder | After the review period ends, the system sends a final reminder to reviewers who haven’t submitted their feedback yet. |
| Review feedback for a paper is submitted | State | Finalize Paper Decision | Once all reviews for a paper are submitted, the system triggers the editor to finalize the paper’s acceptance status (accepted, rejected, or revisions needed). |
| Paper acceptance or rejection decision | State | Notify Author of Outcome | After paper review and decision, the system automatically sends an email to the corresponding author informing them of the paper’s acceptance or rejection. |
| All accepted papers received | Temporal | Start Schedule Creation | Once all accepted papers have been received, the editor begins creating the conference schedule by assigning papers to specific tracks, dates, and venues. |
| Final conference schedule generated | Temporal | Notify Attendees of Schedule | The system sends the final conference schedule to all registered attendees via email, notifying them of their session assignments and timings. |
| Conference day begins | Temporal | Print Final Conference Materials | Two days before the conference, the system generates and prints the final conference materials, including the program and paper summaries for attendees. |

In, Event Decomposition technique identifies other use cases that happen due to specific events or system changes. Such events tend to be of a time (e.g., deadline) or state (e.g., paper status change) nature, and the use cases identify actions triggered by those events, for instance, notifying authors or sending reminders.

**Q5. Create a domain model class diagram for the CCIS, including all classes, attributes, associations, and multiplicity. Show association classes and generalisation hierarchies where appropriate. There should be variations based on your assumption, and the diagram should properly reflect the assumption**

**Key Assumptions:**

* Users of the system may be members of different classes (Authors, Reviewers, Editors, Attendees). These will be treated as subclasses of a generic User class.
* Papers are linked to any number of Authors but one Corresponding Author (this will be treated as an association).
* Reviewers may be assigned any number of Papers to review.
* Reviewers are associated with specific Tracks (conference topics) on which they wish to review.
* Tracks are paper categories that help in the Assignment of papers to reviewers and conference scheduling.
* ConferenceSchedule holds the detailed conference schedule, including Papers assigned to a given Session.
* Sessions are the time slots where specific Papers are presented during the conference.