



Request for New ICT Standard

Case Number	2018-010
Case Name	Meeting Participant Management, Indico

1. Requestor Information

Submitting Dept./Office	DGACM	
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2. Product Information

Product Category	Meeting Participant Management
Product Name	Indico
Version / Model	2.0 or higher
License type / QTY	Open Source / n/a
Manufacturer	CERN (European Organization for Nuclear Research)


3. Justification of Proposed Standard



Business Purpose	Support business functions related to Meeting Participant Management for which there is currently no global single robust solution facilitating harmonized processes. This is part of the Umoja Conference and Event Management project, and the request is being made on behalf of the Umoja Project Director (Chandramouli Ramanathan).
Business Case Reference (if applicable)	Reference attached Project Initiation Document, which has elements of a business case.
Internal and external user base	6,000-7,000 'power' users (conference managers, security officers, event organisers, registrars) 600,000-700,000 meeting participants (could be internal staff or external parties attending conference and events annually)
Technical reasons	As Indico is open source and entirely web-based, global deployment, access and related architecture elements are simplified relative to alternative platforms.
Replaced technology standards (if applicable)	We are not aware of any existing technology standards that relate to Meeting Participant Management systems, but the proposed solution is meant to replace the following local systems: UNHQ eAccreditation (LN platform), UNOV NCBS (LN platform), ESCWA NCBS (LN Platform), UNON Registration System, ESCAP Event Portal, ECA iEvent, DFS FSS Event Management System, UNFCC ORS, UNFCC

	CRS and UNFCC MAS. Please note that none of these systems meet the documented business process requirements (BPRs) for Meeting Participant Management, whereas Indico is a very good fit (based on demonstration of these systems to entities engaged in CEM project and a workshop held in Geneva during which a fit/gap analysis of BPRs to the Indico system was conducted).
Available expertise for product implementation and support	UNOG have a small internal team of well-rounded functional and technical resources. Indico is a mature and stable product; UNOG's collaborative working relationship with nearby CERN, and an engaged open source community provide, a reasonable expectation of available resources as and when needed with minimal risk in this regard. UNOG has been invited to join the Indico Governance Board.
UN organizations supporting the standard	DGACM (as Process Owner of UE2 Conference and Event Management including MPM), UNOG, (including UNCTAD, OHCHR, ODA, UNIS and others), DESA, UN Women, UNHCR, WHO. In addition, Umoja is advocating for the choice of Indico as the enterprise-wide MPM system, and will incorporate management of the Indico into its ERP Governance Structure.
Anticipated productivity and efficiency gains	Indico (CERN version 2.0 or higher), as a mature, robust and flexible product covering all meeting participant management processes, will enable UN Common System entities to deploy it relatively quickly and easily relative to other products or solutions, thus achieving a relatively high degree of process harmonization globally while maintaining the ability to configure Indico to satisfy local process variants as may be necessary and/or desired. This combination of global process standardisation and product flexibility to satisfy entity-specific requirements is a one of Indico's most appealing characteristics.
Standard Scope	<input checked="" type="checkbox"/> Enterprise <input type="checkbox"/> Limited (Local, Departmental, Project)
Recommended duration	<input type="checkbox"/> 2 years <input type="checkbox"/> 3 years <input type="checkbox"/> 4 years <input checked="" type="checkbox"/> 5 years
Estimated costs, including acquisition, implementation and maintenance.	<p>Capital cost: Cost of hardware upgrades to support enterprise-wide deployment, and local investment in scanning equipment. Cost of resources to deploy system globally. Indico is open source.</p> <p>Recurring annual cost: Cost of resources to support implementation (business analysts, developments and help desk support).</p> <p>Additional costs: Indirect costs of business end users to support deployment activities at each site.</p> <p>See attached document: UE2 CEM MPM PROJECT INITIATION DOCUMENT, paragraph 6.3 "MPM Implementation Costs."</p>

4. Evaluation by Architecture Review Board (ARB)	
Overlap with existing ICT standards	There is no overlap.
Evaluation of competing products	Please see attached Umoja CEM Project Initiation Document

4. Evaluation by Architecture Review Board (ARB)	
Fit with existing strategy/current and future requirements	
Technical and functional interoperability with existing standards.	
Security-related features	
Ability of ICT units to operate, support and maintain the product	
Business Viability of product manufacturer	
Procurement Statistics (if available)	

5. ARB Recommendation	
Recommended Action	Endorsed as an enterprise standard for five years.
Proposed status code	<input checked="" type="checkbox"/> Current ICT Standard <input type="checkbox"/> Contained <input type="checkbox"/> Obsolete <input type="checkbox"/> Exception to ICT standards (proprietary product, temporary needs, research, product evaluation, etc.)
Next review date	01/04/2023
Chief Enterprise Architect (Signature)	 Date: 14/03/18

6. CITO Decision	
Reviewed by (signature)	 Date: 15/March/2018
Action Taken	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied <input type="checkbox"/> Returned for additional information <input type="checkbox"/> Make an exception to ICT standards
CITO (Signature)	 Date: 15/March/18

Email this form to: oict-standards@un.org



**UE2 CEM MPM PROJECT INITIATION
DOCUMENT**

**Project: Umoja Extension 2 Conference and Event
Management**

Release: UE2

Date: Dec 2017

7. 1 Project Initiation Document History

1.1 Document Location

The source of the document will be found at this location

1.2 Revision History

Date of this revision:

Date of next revision:

Revision date	Previous revision date	Summary of Changes	Changes marked
		First issue	

1.3 Approvals

This document requires the following approvals.

Signed approval forms should be filed appropriately in the project filing system.

Name	Signature	Title	Date of Issue	Version

1.4 Distribution

This document has been distributed to:

Name	Title	Date of Issue	Version

8. 2 Table of Contents

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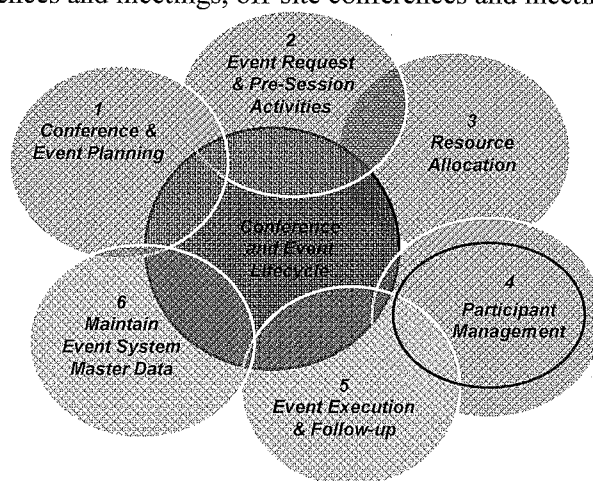
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9. 3 Project Definition

3.1 Background

The scope of Umoja as defined in 2010 and promised to the General Assembly included implementation of a solution for Conference and Event Management (CEM) administrative processes. Preliminary scope and process design work was completed and signed-off by DGACM in 2010/2011. However management decided prioritize implementation of Umoja processes required for IPSAS compliance, and therefore solutions for CEM and several other processes were deferred to a later phase called Umoja Extension 2 (UE2).

Conference and Event Management ('CEM') includes the life cycle of conferences and events, from planning through execution and post-implementation evaluation (see graphic below). It covers official and non-calendar conferences and meetings, off-site conferences and meetings, and special events.



The Eighth progress report on Umoja (A/71/390), approved in December 2016, includes Conference and Event Management ('CEM') among the Umoja Extension 2 deliverables. Preliminary work on CEM processes began in 2017. Based on a number of factors enumerated below, and at the direction of senior management, a decision was made to structure the UE2 CEM implementation as a programme of work, as opposed to a single project. The practical implications of this decision are as follows:

- CEM processes will be broken down into a series of integrated sub-processes (Level 2 Processes)
- Requirements gathering, to-be process reengineering, and technical solutioning and implementation will be done at the sub-process level (i.e. the solution will be designed, built and implemented in phases)
- In each phase, strong focus and attention will be given to future integration points to ensure the final product will be a seamless end-to-end CEM solution
- Separate Project Initiation Documents will be drafted for each project phase

Based on an initial analysis of Level 2 processes, and a review of requirements review and available technical platforms, the first sub-process targeted for implementation is Meeting Participant Management (MPM). The rationale for this decision is based on the following:

- The conclusion of the 2010 business process analysis and fit/gap with the UN's choice of ERP systems (SAP) was that SAP is not a good fit for the end-to-end CEM technical platform
- Based on the above, and as a result of additional analysis completed in 2017, the CEM Process Owner (ASG, DGACM) and Umoja Project Director concurred with

the team's conclusion that the end-to-end CEM solution will be supported on a technical platform comprised of multiple systems, with tight integration between systems

- MPM is a level 2 process that can be carved out of the end-to-end solution and implemented based on the Indico system, a proven solution which is already in use by several key departments (UNCTAD, UNEP, OHCHR, DESA and others)
- Based on a fit/gap analysis of updated business process requirements (BPRs), and a review of current pain points linked to legacy systems and processes, there is significant business benefit to be achieved with an early adoption of Indico as the enterprise-wide MPM platform.

The remainder of this document will focus on design, build and implementation of the MPM solution, although references are made to integration and the overall end-to-end CEM solution to provide context and give assurances of a fully integrated end-state solution.

3.3 Desired outcomes

The desired outcomes of this phase of the CEM project are as follows:

- All Umoja entities (i.e. all entities using the Umoja Integration solution – see Appendix A) will operate on harmonized Meeting Participant Management processes for event types defined as in-scope for CEM
- An enterprise-wide implementation of an MPM solution on a single technical platform
- The MPM solution is flexible enough to handle all event types in scope without significant enhancements to the proposed technical solution
- Entities in scope will derive business benefit from the MPM solution prior to implementation of the end-to-end CEM solution
- The MPM solution can be seamlessly integrated with other CEM processes and technologies
- The MPM solution can be implemented across all Umoja entities within the timeframe established in the project plan.

3.4 Project scope and exclusions

Process Scope

The scope of this phase of the CEM programme is comprised of processes related to Meeting Participant Management, and implementation of interfaces with following systems: SAP (Umoja) HR/Travel, Unite Identity (for single sign-on and possibly master data), Inspira (for learning events currently managed in Inspira LMS), gMeets (for all events currently initiated in one of the gMeets distributed systems), C.Cure (for printing 'primary' badges) and gData (for corporate reporting on meeting participants and other MPM data). With the exception of gMeets, detailed requirements for these interfaces have not been articulated and the scope may change when discussions are underway. The 2010 process analysis included only one Level 3 process under Level 2 Participant Management (also called Participant Management). However, the process analysis completed in 2017 defined more granular level 3 MPM processes, which now comprises: Managing Invitations, Managing Registration and Badging and Check-in. In addition, a component of CEM Master Data Management is required to support MPM, and therefore is included in the MPM scope.

The Level 2 processes included in the end-to-end CEM solution scope, but **excluded** from the MPM project consist of the following: Conference and Event Planning, Event Request and Pre-Session Activities, Resource Allocation, Event Execution and Follow-up and non-MPM components of

Maintain Event Systems Master Data. However, there may be some overlap of functionality between MPM and these processes, in which case some requirements related to these processes will be covered in the MPM solution.

Technical (systems) Scope

The proposed technical platform for the MPM solution is a product called Indico (Integrated Digital Conference system). It was developed by CERN, the European Nuclear Research facility, and is an open-source system. Under the direction of the DG, UNOG and UNOG's Conference Management Services, Indico was implemented for multiple departments that run conferences and events on the Palais grounds. It has been operational at UNOG for over two years, and therefore is a proven solution for UN entities. Please note that CERN published statistics in 2017 showing that over 520,000 conferences and events have been managed using Indico, with a rate of over 300 events per day being configured and managed. Over 34 organizations world-wide have registered for Indico 2.0 since the upgraded release was made available in July 2017.

Building on the work done by the UNOG CMS and ICT teams, Umoja and DGACM propose to include an enterprise-wide deployment of Indico in the UE2 CEM MPM scope. The technical infrastructure on which the current Indico system runs is insufficient to meet enterprise-wide requirements. A technical platform that can handle the global rollout must be sized, and additional hardware purchased and installed at the primary and secondary EDCs (Enterprise Data Centres) before proceeding with the enterprise-wide deployment. In addition, devices such as passport and QR scanners must be installed at local sites to support the implementation. The infrastructure upgrade and installation of scanning devices is also in scope.

Finally, operating under the assumption that Indico will be confirmed as the enterprise-wide MPM system, the UE2 CEM MPM scope includes a technical upgrade of Indico from version 1.0 to version 2.0 or 2.1.

Additional Exclusions

Specifically **excluded** from the MPM project are the following:

- Replacement of the core DSS systems for badge printing (C.Cure) and access control
- Implementation of Indico to non-Umoja entities which currently use UN premises for events. For example, UNDP and UNICEF use conference facilities and services in the UN Secretariat building, UNIDO, IAEA and CTBTO share conference facilities with UNOV, and WHO, UNHCR and other Geneva-based entities hold conferences on UNOG premises and UNOG departments provide services to staff those conferences. Despite this scope exclusion, we wish to bring this scenario to the attention of management, since DGACM and the Department of Safety and Security would derive business benefit from a rollout to these entities. Please also note that UNOG DSS has expressed requirements for an Indico rollout to **all** entities using Palais premises, and that project is within the scope of the UNOG Indico team.

Ancillary Processes/Systems for Consideration

Ancillary processes and legacy systems which are tangential to the MPM scope and should be considered as additional priority projects are:

1. the registration process for delegates and families who work for permanent missions, the former of whom regularly attend conferences and events, and therefore would (ideally) register for conferences/events in Indico, and
2. the status determination process for NGOs, which is a process managed by DESA to review and grant different statuses to NGOs (General, Special and Roster). Only representatives from NGOs that have been granted specific status can attend conferences and events, and therefore DESA has requested integration between the iCSO database and Indico for the participant registration process.

The legacy system that supports registration of delegates is known as the PLS database, with Protocol Liaison Service as the client; the portal and application that manages the NGO status determination process is called iCSO, and is maintained and used by DESA. Both systems are at end-of-life, are no longer fit-for-purpose given evolving requirements, and are in need of replacement due to technical platform issues (PLS is a Lotus Notes database, and iCSO was developed on antiquated software by a consultant who no longer works for the UN). OIOS included observations on the iCSO system in a recent audit report, and recommended a complete overhaul of the system and related processes. Based on a cursory review of DESA's requirements, the Umoja team highly recommends a fit/gap of the iCSO requirements with the UN enterprise CRM system.

3.5 Constraints and assumptions

Primary constraints that would impact a smooth and timely implementation of an MPM solution are: **Resources:** The Umoja and DGACM CEM teams and the UNOG Indico team are few in number (Umoja resources assigned to CEM are part-time, and DGACM's budget supports only one P4 and one G6 for UE2 CEM), and are already stretched beyond capacity. The Indico team is already supporting multiple departments and non-Umoja entities currently using Indico, and have commitments for additional rollouts and development activities. The business must assign resources to implementation tasks (testing, training, documentation and communication), and the work must be done within existing resources since budgets for this biennium did not include line items for additional resources. Finally, MPM business requirements articulated the need for several interfaces, and business analysts and technical developers will be required to design, develop and test these interfaces. The following table outlines the systems with which Indico would integrate and departments/teams who would need to assign resources:

System	Department/Team
Umoja/SAP HR and Travel	Umoja, DGACM, OHRM and OCSS/Travel, UNOG Indico
Unite Identity (single-signon)	OICT, UNOG Indico
Inspira (learning management events)	OICT/Bangkok, OHRM, UNOG Indico, DGACM, Umoja
C.Cure (for badge printing)	DSS, UNOG Indico, DGACM, Umoja
gMeets (extend interface across all gMeets instances)	OICT/UNOV, UNOG Indico
gData (for corporate reporting)	DGACM/ICT, OICT, UNOG Indico, DGACM, Umoja

The following assumptions apply:

1. OICT/Architecture Review Board (ARB) will approve a standardization case for the standard CERN Indico version as the enterprise-wide MPM solution; the submission will be made jointly by Umoja and the Indico team and will be based on the extensive fit/gap analysis conducted by Umoja, UNOG/Indico team and the business in late 2017.
2. Following the review by the ARB, and anticipating approval of the CERN Indico solution as a standard, management will confirm recommendation for scaling up Indico to be the enterprise-wide MPM solution.
3. The business will make every effort to change processes to conform with capabilities of selected technical platform; the only exceptions will be where the product demonstrably does not meet a business-critical need.
4. Entities will be amenable to a phased approach to implementation, both across and within entities. Drawing on lessons learned from prior UN Indico roll-outs, the roadmap to success is to pilot one conference/event within a department, and based on that experience proceed with configuring additional events in the system.
5. DGACM, as the CEM process owner, will settle any conflicts that arise between entities in terms of process harmonization and enhancement requests.
6. DSS will define badging and security requirements, and will also enforce compliance across the organization.

7. An upgrade to Indico 2.0 or 2.1 will be included in the project (required to meet ICT standardization prerequisites as well as to address security vulnerabilities, as well as to leverage enhanced plug-in feature developed by CERN for interfaces).
8. Adequate project resources will be allocated by the business, Umoja and corporate ICT teams to meet timelines set out in project plan.
9. Umoja and DGACM CEM resources will need to turn focus and attention to other components of the CEM solution in 2018. Therefore their engagement with the MPM project will be somewhat limited, which emphasizes the need to augment all teams, in particular the UNOG Indico team, in order to delivery on-time.
10. Each entity will cover staff costs for focal points and process experts to conduct project and change management activities.
11. Indico governance will be merged with Umoja governance to ensure alignment of priorities as well as manage enhancements to the standard software.

3.6 Impacted business entities/stakeholders

The CEM solution, including the MPM component, impacts the front-office mandate of the UN. DGACM summarizes their purpose and mission statement as follows *“Our work is central to the mandate and functioning of the United Nations as an international forum within which representatives of Member States and other groups meet to deliberate on the major questions facing the world today and to propose answers to those questions. Our mission is to facilitate and enhance dialogue and cooperation among Member States and, by doing so, to contribute to the realization of the objectives of the United Nations and the Sustainable Development Goals.”* This highlights the criticality of optimizing processes and delivering superior solutions and systems for managing conferences and events.

DGACM’s mission statement can be extended to cover the mandate of other UN department and entities whose primary goals include bringing member states and civil society together to achieve progress on the Sustainable Development Goals. In addition, the scope of the CEM solution includes delivering a solution for events managed by back-office administrative departments, e.g. training events, vendor conferences. Ensuring smooth operation of these types of events contributes to an effective and efficient delivery of services which can reduce administrative overhead costs.

The impacted businesses/stakeholders comprise a) Member States, b) all departments and entities currently using the Umoja Integration Solution (see Appendix A), and c) entities such as NGOs and civil society organizations who send participants to UN conferences and events. Key stakeholders in terms of management and delivery of the solution include: a) DGACM (as Process Owner), b) the Umoja Project Owner, Project Director and team (as the department responsible/accountable for delivery of the broader Umoja solution), c) Department of Safety and Security (as the guardian of and final decision-maker with respect to policies and procedures related to ensuring UN premises are secure) and d) corporate ICT teams, especially the UNOG Indico team, (for consideration of the Indico tool as an enterprise MPM solution, and technical implementation of the solution and related interfaces), OICT and DFS/GSC/ICT. Finally, in terms of the overall CEM solution, key stakeholders include service providers, i.e. internal and external entities who staff conferences and events.

10. Key Risks/Pre-Requisites

4.1 Constraints, Assumptions and Dependencies

Please see Section 3.5 above for constraints and assumptions.

The following dependencies apply to the MPM component of the CEM programme:

1. **CERN:** Assuming the ARB approves Indico as a standard, and management agrees that Indico should be the UN enterprise platform for MPM, there is some dependency

on CERN. Indico was developed and is maintained by CERN; CERN has declared the product as an open-source platform. CERN is demonstrating full commitment to Indico as a platform for event management in at least two respects: 1) their technical resources transitioned Indico from an antiquated platform to current technology with their recent 2.0 release, and 2) CERN's business community is extending its use of Indico as the platform for managing not just technical conferences but also informal internal meetings. In order to meet schedule for the upgrade, CERN resources must be available to respond to technical questions regarding the new release.

2. **Umoja Resources:** There may be dependencies on the SAP Process Integration upgrade; the later version may facilitate development of interfaces.
3. **Other Resources:** As noted above, there are dependencies on other departments and resources for design, development and implementation on interfaces as well as installation and testing of the solution.
4. **Budget:** To take advantage of all features available in Indico, budget should be allocated not just for human resources (outlined above) but also for infrastructure. Additional servers will be required to maintain adequate performance as more entities deploy the solution, and passport and QR code scanners and (possibly) additional printers will be required for batch/online badge printing and scanning documents at the access control point.

4.2 High priority risks

Budget and Resources: Insufficient resources (financial and human) will be assigned to the project to support an enterprise-wide roll out of the MPM solution. Local entities will revert to old processes and upgrade location-specific technical platforms because of delays caused by lack of prioritization and commitment.

Incomplete delivery if focus is not maintained: MPM project will proceed based on phased implementation as described below, but interfaces will be delivered late or not at all if resources are not allocated (see Implementation Costs below, and more detail will be provided in the workplan). This will result in overall dissatisfaction on the part of the business.

4.3 Highly interdependent activities

Implementation of the MPM component of the CEM programme is largely discrete, and not impacted by other activities (although the opposite is true for implementation of the broader CEM solution). However, the Department of Conference Management has outlined a programme of work for the Indico team, and these deliverables will impact the UE2 MPM project. Efforts should be coordinated and brought under the Umoja Governance structure.

4.4 Potential issues that could cause delay/interrupt planning

If the ARB does not approve Indico as a standard, the project plan would have to be reworked to include analysis of other options for the technical platform. However the likelihood of the ARB rejecting Indico as a standard is low, provided prerequisites outlined in the standardization case are met (these include a) a review of the upgraded version of Indico to ensure compliance with security standards set by OICT, b) migration of the infrastructure to the EDCs, and c) oversight of the project by the Umoja Governance structure).

Again, if insufficient resources are allocated to the project, or the Umoja and/or DGACM CEM and/or Indico team members were to be reassigned, the project plan would have to be reworked.

11.5 Project Approach

5.1 *Conference and Events Management*

As described above, Umoja Extension 2 Conference and Event Management will be run as a programme of work, or a series of related projects, rather than as a single project. The rationale for this approach is as follows:

- Process and fit/gap activities completed in 2010 and resumed/redone in 2017 resulted in the same conclusion: there is no one system which can provide an end-to-end, out-of-the-box solution for CEM. Instead the CEM technical platform will likely be comprised of a set of legacy systems, tightly coupled and integrated with existing UN enterprise systems.
- Each Level 2 process will require extensive requirements confirmation/updates, and a review of systems (enterprise, local and packaged solutions) to assess the fits and gaps, and ease of integration with other systems, prior to making a recommendation to concerned parties regarding applicability to the solution.
- Therefore management and project team members decided a practical approach was to break down the CEM end-to-end process into component parts, and address design, build and implementation in phases.
- Another consideration was ongoing development and upgrade activities already underway for some key systems under consideration (e.g. One-Stop-Shop, gDocs 2.0, Umoja Extension 2 Budget Formulation and PPM).

5.2 *Meeting Participant Management*

The Level 2 Meeting Participant Management process was targeted for early solutioning due to the following:

- The MPM sub-processes are relatively discrete and can be designed and implemented without risk of influencing decisions on upstream and downstream CEM processes
- A review of systems currently in place and/or under developed identified a clear leader in terms of fit with existing requirements (Indico)
- Indico is a proven solution in the UN, having already been deployed as a solution for UNCTAD, UNEP, etc. and is being piloted in DESA and UN Women.
- The proven flexibility of Indico promises to deliver a solution that is largely configurable, and enhancements already developed and implemented address many of the identified UN-specific requirements. In addition, CERN has expressed interest in working with the UN to incorporate key UN enhancements in the core solution.
- There is clear business benefit to implementing the MPM component of the CEM solution in isolation of the rest of the Level 2 processes (see Business Case section below).

Project Management/Development Methodology: The UN will use the agile project management methodology to implement the MPM solution. This aligns with the methodology used to date by the UNOG Indico team and by other Umoja Extension 2 projects. In order to meet project timelines, the UN will have to scale up the development team to undertake an upgrade whilst continuing to deploy on the current platform. The Umoja, DGACM and Indico teams assessed the approach of upgrading to Indico 2.0 (or 2.1) whilst also deploying additional departments/entities on the current version as **low**. The assessment is based on the following factors: a) CERN's rewrite of the Indico application to

2.0 is largely a technical upgrade and b) the learning curve for Indico is relatively low in comparison to a product like SAP, and therefore the delta training will be manageable for the business community.

Deployment Approach: The Umoja, DGACM and Indico teams are recommending a phased approach to deploying to additional departments/entities. Building on a proven approach, the broad strokes of implementation to a department/entity are: a) an experienced Indico Business Analyst (BA) demonstrates the product to key business users, b) the Indico BA works closely with the department/entity to configure an event in the Indico demonstration environment and the business proceeds to exercise all required MPM functionality on the test event, c) gaps in business requirements are noted and categorized as 'business critical' (i.e. must be addressed prior to moving forward, or High/Medium/Low but not 'show-stoppers' in terms of proceeding with next steps, d) the Indico BA works with the business to configure an event selected by the department/entity and the event is then managed in Indico. In some cases, the event is managed in parallel with the legacy processes and systems to minimize risk; the business makes the call on whether parallel processing is required. Lessons learned are documented and the gaps are reassessed and updated for future consideration of enhancements. The business then proceeds to manage future conferences and events in the Indico production system.

'Industrialization' of this approach will be required in order to deploy across all Umoja department/entities in a reasonable timeframe. This implies scaling up the number of Indico-and-CEM knowledgeable business analysts and the Indico development team. In addition, the number of enhancements is anticipated to be relatively low based on the fit/gap exercise conducted in late 2017.

Integration: The Umoja, DGACM and Indico teams are also recommending a phased approach to design and development of interfaces with other systems (see list in section 3.5 above). The benefits of deploying Indico as-is (i.e. without the interfaces) are proven. The entities currently using Indico are already deriving benefits (see Appendix B for an UNCTAD paper describing qualitative benefits achieved by their Indico implementation), and, with the exception of the UNOG gMeets to Indico interface, none of the integration requested by the business is in place. However, at a workshop held in November 2017, the business clearly stated that proceeding with the Indico implementation was predicated on a commitment to deliver the interfaces in the foreseeable future.

12.6 Business Case

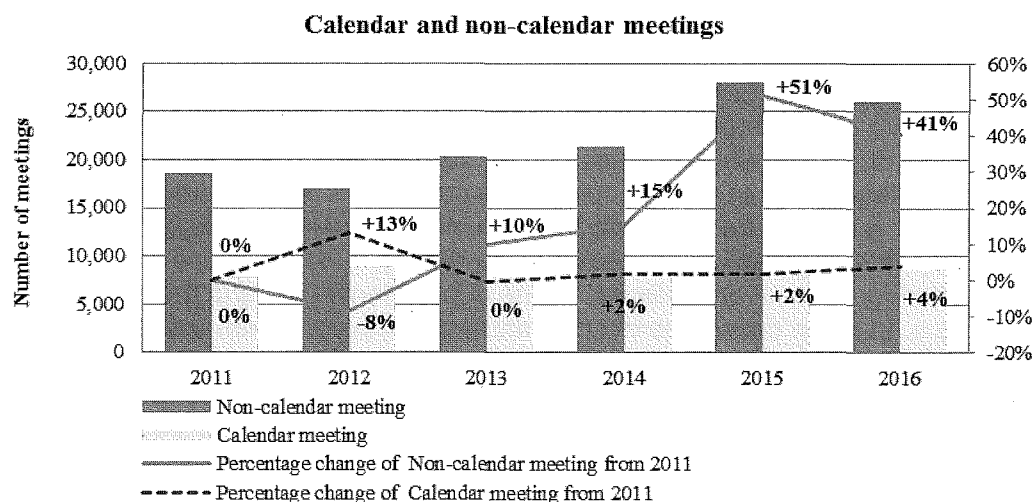
6.1 Umoja/UN Committed to Provide a CEM Solution (original Umoja scope)

The original Umoja scope included implementation of a solution for Conference and Events Management. Approximately 218 business process requirements were articulated by DGACM and other conference management services business units, and included in the Request for Proposal of ERP software. The Umoja process design exercise defined approximately 330 business processes for inclusion in the Umoja solution, 16 of which were CEM processes (see Appendix C for CEM process list). The SG progress reports on ERP implementation committed to the General Assembly full implementation of these processes.

6.2 Business Case for MPM Solution

The number of conferences and events conducted across the UN Secretariat and other Umoja entities is growing. Unfortunately absent a corporate CEM reporting system, obtaining exact statistics on trends would be a labourious manual effort. DGACM produced the following chart and detailed

statistics on official calendar events and non-official calendar events that take place in DGACM/DCM managed conference rooms.



Please note the chart above is based on events at UNHQ and the OAHs (UNOG, UNOV and UNON). Missing from the statistics, inter alia, is the following: a) events that are held on UN Regional Commission premises, b) side events, c) events managed across the UN that do not use the DGACM/DCM-managed conference rooms, d) DFS/DPKO training and other events conducted outside of UNHQ (e.g. at Global Service Centers in Brindisi, Valencia and Entebbe, and at the Peacekeeping and Special Political Missions}, and e) events managed by Umoja entities that are not part of the UN Secretariat (e.g. UNFCC).

DFS/DPKO are in the process of conducting a footprint analysis of events that would be managed in Indico; all indications are that the DFS/DPKO event volume will measure in hundreds, and perhaps even thousands. Keeping in mind that event coordinators are managing the vast majority of these events with Excel spreadsheets and emails, and Indico implementation in DFS/DPKO would be a quantum leap forward in terms delivering more effectively and efficiently.

At the macro level, Conference and Event Management processes across the UN are currently not globally harmonized, involve multiple non-integrated solutions, and many core processes lack sufficient tools for efficient execution. Owing to historical ICT constraints and organizational dynamics, localized solutions were deployed to meet the needs of individual entities with little or no enterprise architecture and with substantial gaps in key functional areas including participant management. Given the volumes described above, the current status of processes and systems available to support CEM meeting participant management, and in light of the increasing pressure to do more with fewer resources, the imperative to prioritize this project is clear.

Generally speaking, the business case for a CEM solution (including MPM) parallels that of other Umoja administrative processes such as finance, human resources and payroll, supply chain and real estate. The elements of the Umoja business case which apply to CEM, and with an MPM context include:

Process optimization and harmonization: MPM processes are not optimized or globally harmonized across the entities included in the Umoja scope. The benefits of doing so include the ability to operate in a more flexible and agile manner, provide a common user experience, and the ability to support mobility across the UN.

Increased operational effectiveness and timeliness: The proposed solution supports processes and provides features and functions that will greatly increase operational effectiveness. Key examples include:

- Meeting Participant self-service registration for conferences/events (not universally supported by legacy systems)

- On-behalf registration by authorized parties (e.g. staff of permanent missions, NGO staff)
- Built-in communication with participants via email
- The ability to generate QR-codes for approved participants for scanning at UN premise access control point
- The ability for conference managers to configure approval workflows by event
- The ability for conference managers/business to easily configure and brand an event-specific website, and post information about the event, including registration instructions
- The ability for conference managers/business to easily configure timetable and agendas
- Room booking capabilities
- The ability to upload and share documentation with participants in advance of the conference/event, and for participants to easily access that documentation during and following the event (a powerful search engine allows for searching across documents)
- Automated official List of Participants document
- mobile application for security officers for badging and check-in
- Support for multiple UN official languages in the registration process
- Time zone awareness
- Customizable registration forms
- Special processing for NGO registration according to UN rules
- Real-time operational statistics and logs
- Configurable event-specific surveys
- Visa attestation letters
- Payment options (for participants to reimburse UN for optional activities – meals, etc.)

The actors in the process who benefit the most are a) meeting participants, b) conference managers and c) the Department of Safety and Security.

Meeting Participants have a better overall user experience; they control their own personal data and registration experience, can have access to a web-site with event-specific details, including up-to-date agendas and documents, and can gain access conference/event premises in an expedited fashion.

Conference/Event managers will also have a better user experience in terms of planning, organizing and running conferences and events (see Indico system features listed above). Many conference and event managers are still working with Excel spreadsheets and email as their main tools for planning and running events, creating agendas, communicating with meeting participants, collecting feedback from participants and liaising with the DSS for badge creation. Legacy systems provide some level of automation for event managers in some locations, but solutions involve multiple non-integrated solutions, and core MPM processes lack sufficient tools for efficient execution of all event types in scope of UE2 CEM (note that some systems cater for official calendar events only). Please see the following youtube videos that describe the benefits of an Indico implementation (CERN and UNOG video productions):

<https://www.youtube.com/watch?v=yo8rgg9dOcc>

<https://www.youtube.com/watch?v=FblZHdOCrrs>

The **Department of Safety and Security** will see measurable improvement seen in the badging and check-in process, as evidenced by the UNOG experience. Prior to the implementation of Indico, the time required to validated credentials of a meeting participant and grant access to UNOG premises

was two minutes. Meeting participants were often required to queue up in long lines at the UNOG gates, and sometimes arrived late to meetings. With the implementation of Indico and a moderate investment in scanning equipment (approximately 20K USD), this process now takes thirty seconds. Based on these results, UNOG DSS has championed the implementation of Indico across all entities holding events on the Palais grounds, including non-Umoja entities such as UNHCR and WHO. However, UNOG security raised one note of caution at the UE2 CEM MPM workshop: no software solution can resolve the inefficiencies due to sub-optimal physical set up of access control points. The gates and entry points to UN premises need to be rearchitected to resolve these types of issues.

Integration/Defragmentation of systems: UN Umoja entities currently use location-specific systems, as well as MS Office tools and email, to manage the MPM processes (see Appendix D for MPM systems inventory). There are inherent inefficiencies with maintaining and using disparate systems across the UN to support the same processes. OICT’s strategy calls for defragmentation of systems (i.e. implementation of enterprise-wide solutions and systems) which frees up resources to focus on the core mandate as opposed to unnecessary duplicate administrative overhead tasks.

Common reporting platform: Implementing an enterprise-wide MPM solution will facilitate corporate reporting on a common reporting platform.

6.3 MPM Implementation Costs

The cost of an MPM implementation is still being analyzed. However, the following cost categories apply:

Software licenses: Assuming Indico is approved as the MPM solution, there are no software license fees. Indico is an open-source product.

Hardware costs: The core infrastructure on which the current UNOG Indico system runs will have to be scaled to manage the load associated with an enterprise-wide implementation. This means additional servers, and migrating the platform to Enterprise Data Centers (primary and secondary for Disaster Recovery). Local sites will also need to procure or re-purpose scanning hardware (passport and QR code scanners). A rough indication of costs is 20K USD for larger sites; this is based on the UNOG investment.

Resources: Team resources will need to be scaled to manage and support an enterprise-wide implementation of Indico. The UNOG Indico, DGACM and Umoja teams will need to be augmented; further analysis is required to give specific recommendations. However preliminary analysis based on discussions held with DGACM and UNOG following the workshop indicate that at a minimum, 2 additional Indico Business Analysts and 3 additional Indico developers should be added to the team to a) manage the Indico upgrade and b) complete an enterprise-wide rollout within (roughly) a two-year period. In addition, a Change Management resource should be added to the core team for the project duration to liaise with the primary focal points and process experts during deployment. A technical writer should be assigned to the team for an approximate duration of 80 days (part-time over the course of the project) to ensure the Indico solution is well-documented. Additional resources (BAs) will also be required define interface requirements, and developers will be needed for the build, test and implementation of the six interfaces outlined in section 3.5 above. Finally, the Unite Service Desk may require additional resources to provide Tier 1 support for Indico. *Assumption:* Indirect costs for business resources who will work on the project will be borne by the business.

13.7 Project Management Team Structure

- [A chart showing who will be involved with the project.]
- UNDER DEVELOPMENT

7.1 RASCI (Responsible, Accountable, Support, Consulted, Informed)

Task/Deliverable	DGACM (PO)	DSS	Business Entities	Umoja	Corporate ICT	UNOG Indico (ICT and DCM)
Project Manager(Business) Identification & Mobilization						

Process Experts Resource Mobilization						
Business Experts Resource Mobilization						
Umoja Project Manager and Experts Mobilization						
Corporate ICT Resource Mobilization						
Develop Project Plan						
Secure Budget (for resources and technical infrastructure)						
Scale infrastructure for Enterprise deployment and install in selected primary/secondary data centres						
Develop Support Strategy – all Tiers						
Approve Support Strategy						
Implement Tier 1 Support Structure						
Implement Tier 2 Support Structure						
Implement Tier 3 Support Structure						
Gather and Document Interface Requirements						
Draft Interface FSDs						
Draft Interface TDs						
Develop and Unit Test Interfaces						
Perform Integration and User Verification of Interfaces						
Sign-off Interfaces for Move to Prod						
Gather and Document Enhancement Requirements						
Draft Enhancement FSDs						
Draft Enhancement TDs						
Develop and Unit Test Enhancement						
Perform Integration and User Verification of Enhancement						
Sign-off Enhancements for Move to Prod						
Develop POC Events for Early Adopters						
Configure Indico (backend config) for Early Adopters						
Configure events (front-end config options accessible to business) for Early Adopters						
Launch events for Early Adopters and Monitor						
Analyze impact of upgrade on current Indico implementation and document						
Perform technical upgrade activities						
Perform unit testing of upgraded system						
Perform integration and user verification testing of upgraded system						
Modify training material and instructions for Indico end users						

Complete independent assessment and request confirmation of standardization from the ARB (no longer conditional)						
Deliver training on upgraded systems (Webex, recorded demos etc.)						
Develop/implement CEM policy changes required for Indico implementation (if required)						
Develop POC Events for remaining entities						
Configure Indico (backend config) for remaining entities						
Configure events (front-end config options accessible to business) for remaining entities						
Launch events for remaining entities and Monitor						
Evaluate Implementation and plan follow-up actions						
Develop/implement Event Management policy and SOP changes required for Indico implementation (if required)						
Develop/implement Safety and Security policy and SOP changes required for Indico implementation (if required)						
Apply policy changes locally (including local SOP documentation updates)						

14.8 Role Descriptions

The following outlines the project management team and other key resources:

- Business Process Owner: Movses Abelian, ASG, DGACM
- Umoja Project Director: Chandramouli Ramanathan, ASG, Project Director, ERP Umoja
- UE2 CEM Business Project Manager: Xuesong Ma, Director, DGACM/CPCD
- UE2 CEM Umoja Project Manager: Ann Kenney, Team Lead, ERP-Umoja
- UE2 CEM Business Project Manager (for day-to-day activities): Uta Steckhan, Management Analyst
- UE2 CEM Analyst, John-Michael, Senior Programme Assistant

Names highlighted in green are the only full-time resources dedicated to the UE2 CEM project. In addition to the above, focal points have been assigned from selected UNHQ departments, OAHs, RCs, DFS and UNFCCC. Please see Appendix E for the list of focal points, who have taken on their CEM project responsibilities in addition to their day-to-day jobs (i.e. without backfill or additional support).

A critical success factor for the MPM project is rapid augmentation of resources on the Indico team (technical and business analysts), and the ability of the current Indico team to not only transfer knowledge to new resources but also to lead Umoja, DGACM, business focal points and new team

members in the deployment of the solution. Team augmentation is critical to allow for a) continued support of entities/department who are already live on Indico, b) meeting current commitments of Indico team, and c) scale up to execute the enterprise-wide deployment of Indico.

15.9 Status of initiation stage deliverables

9.1 Project requirements

The following documents have been or will be produced to define scope and project requirements for the MPM solution:

UE2 CEM Kick-off Presentation: Primary focal points were confirmed in August 2017, and a UE2 CEM kick-off meeting was held on 17 August 2017. The presentation outlined the Project Context and Objective, Governance, Scope and Timelines (which require revision), Project Methodology, Roles and Responsibilities, and Structure of Ongoing Engagement with the Business (see Appendix F for UE2 CEM Kick-off Presentation).

MPM BPR list: The MPM business process requirements (22 in total) articulated in 2007 for the ERP software selection process were reviewed and confirmed by the business via a survey. In addition, the MPM BPR list was expanded to 148 via a comprehensive review and reverse-engineering exercise of existing systems and processes. The list was reviewed and confirmed by process experts from the business community. (See Appendix G for the complete list of MPM BPRs).

Process maps: The level 3 MPM process map from 2010 broken down into sub-processes to cover the following sub-processes: Prepare MPM Master Data, Manage Invitations, Register Participants, Badging and Check-in. Draft process maps have been developed and will be validated by the business process experts to agree harmonized processes. See Appendix H for to-be process maps (please note some maps are still under development).

Pain points: The pain points documented in the 2010 Executive Solution Summary documents were reviewed and updated by the business via a survey. See Appendix I for the pain point analysis.

Systems Inventory: The inventory of systems which support the MPM processes was updated via a survey (see Appendix C).

9.2 Fit/gap analysis

A fit/gap analysis which compared the updated BPR list and draft processes with the proposed technical solution (Indico) was conducted with the business. The forum for this exercise was a workshop held in Geneva in November 2017; the following entities were represented at the workshop: UNHQ (DGACM CPCD and DGACM PLS, DPI), UNOG, UNOV, UNON, ESCAP, ESCWA, ESCAP, and DFS (UNHQ and GSC/Brindisi representatives attended). DESA participated via VTC. DSS delegated their representation to UNOG DSS resources, and ECLAC and UNFCCC were unable to attend for budget and operational reasons, respectively. The methodology followed during the workshop is described below:

- Structured scenarios of the end-to-end MPM process were defined in advance by the core project team and DFS
- Focal points from entities attending the workshop reviewed and augmented the scenarios
- Following the scripted scenarios, Indico experts gave live demonstrations of the proposed solution to demonstrate the capabilities of Indico and its inherent flexibility which allows for process variants
- Business process experts documented the fits and gaps by BPR, indicating whether they had seen the BPR demonstrated in full, partially or not at all
- Extensive follow up is underway to reconcile differences of opinions across entities who participated in the workshop; the fit/gap document will be updated as this exercise progresses (see Appendix J for current evaluation of BPR fit with Indico)

Although there is work remaining on the fit/gap evaluation, the general consensus of most entities represented at the workshop is that:

- Indico is by far the most robust system currently in use by the UN,
- Indico is flexible and configurable, and puts sufficient control in the hands of the business to configure events to address both primary processes and variants
- Indico is a good match with many of the BPRs, and there is scope to reengineer processes to match the system capabilities
- With the design and implementation of requested interfaces, Indico is the best available MPM solution for the UN.

Several entities volunteered to become ‘early adopters’ of the solution, in advance of the upgrade and interface development.

9.3 Data conversion approach

At this point, data conversion requirements to be analyzed are restricted to HR/BP master data. Further analysis is required to determine what data from Umoja HR would be converted to Indico (to establish Indico accounts so participants can register for event), and what is any data should be converted to HR mini-master records from Indico.

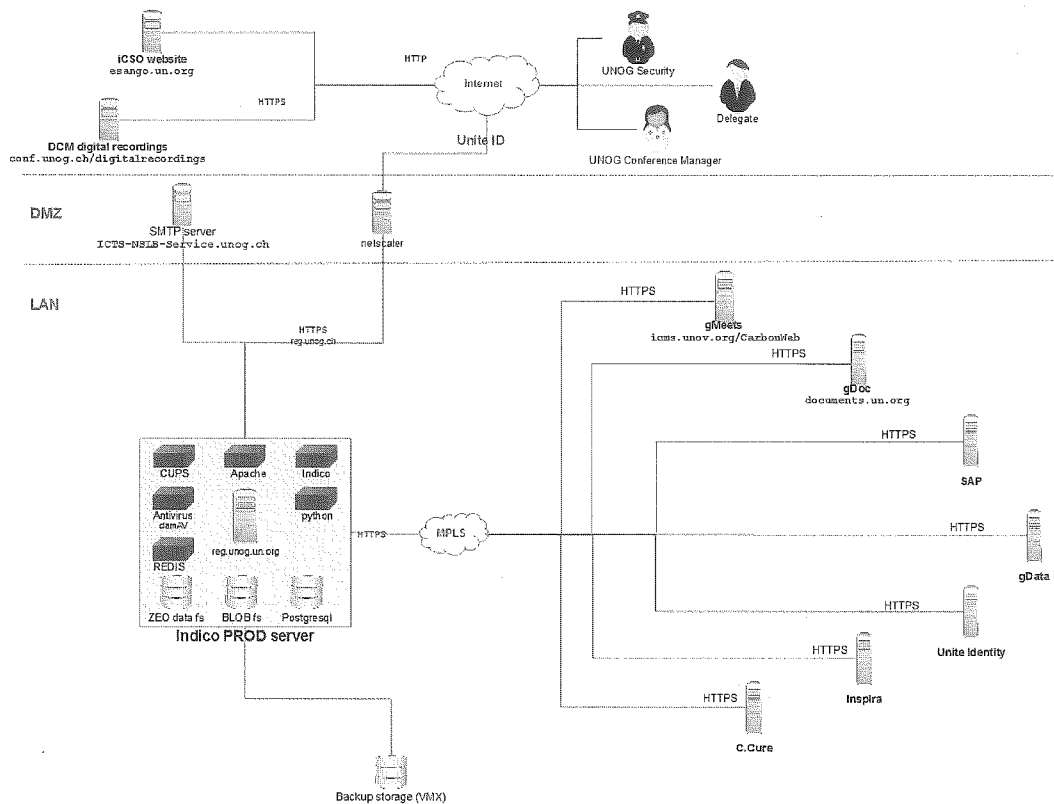
9.4 System landscape

The Umoja and Indico technical teams are proposing a single-database instance for the enterprise-wide roll out. This aligns with the UN strategy for other enterprise-wide systems, and meets business requirements to maintain one profile for an individual meeting participant who may attend conferences and events across UN entities.

Interface protocols will be established during the technical design of each interface with Indico. The standard protocol for integration with Umoja/SAP is SAP Process Integration. The landscape diagram below will be updated as the project progresses and interface business requirements and technical design proceeds.

The Indico and Umoja CEM/DGACM CEM teams are recommending inclusion of an upgrade to Indico 2.0 or 2.1 as part of this project, a key reason being the newer Indico technology platform facilitates technical integration through plug-ins.

The following diagram is a systems representation of Indico and the systems with which Indico will ultimately integrate.



16.10 Communication Management Strategy

The CEM project, including the MPM component, will model the communication strategy on what was used for previous Umoja implementations.

Senior-most Level of Management: The team will utilize the agreed governance structure for reporting status and progress to the most senior members of the UN (i.e. the Process Owner and Umoja Project Director and their managers will report back to the Senior Management Committee and SG/DSG and their front office based on documents such as scorecards prepared by the project team and reviewed by entities).

Umoja Steering Committee: The Umoja Steering Committee will be briefed regularly by the Process Owner (in this case, ASG, DGACM), the Umoja Project Director, and the CITO.

Process Owner: The Process Owner will be kept apprised of, inter alia, all aspects of project status, parameters required to make business decisions, and requirements for review and possible revision of policies, by the DGACM UE2 CEM Project Manager and his reports. The Umoja team will support the DGACM Project Manager and his team in this regard.

Umoja Project Director: The Umoja Project Director will be kept apprised of all aspects of the project by the Team Leads for CEM and Deployment (Yoon's title?) and the Umoja PMO. PMO meetings will occur every other week, and the format will be exception-based reporting. The Umoja team will be supported by the DGACM CEM team in this regard.

Business: Umoja and DGACM will use the hub-and-spoke approach to work with the business on all aspects of the project (business requirements gathering and confirmation, systems inventory, design of to-be processes and systems, testing, training, role mapping and assignment, communications and outreach to end users and any other change management activities). The structure is already in place; the Process Owner and Umoja Project Director coordinated outreach to Umoja entities for assignment of focal points in the following departments/entities: UNHQ (DGACM including PLS, DESA, DSS, DPI), OAHs, RCs, DFS and UNFCCC. The list of focal points was confirmed in August 2017. These focal points will work with their colleagues to ensure engagement across the organization, in particular for change management activities. The core Umoja/DGACM CEM team is conducting weekly Webex sessions to deal with all aspects of

the project. Workshops such as the one held in Geneva in November 2017 will be arranged on an as-needed basis. A community of practice was also set up for the CEM project in Unite Connections.

17.11 Project Plan Published on Microsoft Project Server

- [Describing how and when the project’s objectives are to be achieved, by showing the major products, activities and resources required on the project. It provides a baseline against which to monitor the project’s progress stage by stage]

11.1 Master Project Plan

11.2 High-Level Milestone (Dates)

Milestones will be extracted from Project Plan; at a minimum, they will include:

Milestone	Date
PID Approved	
Standardization Case for Indico Approved	
Budget for Additional Resources Secured	
Analyst and Developer Resources Recruited and On-board	
Technical Infrastructure Strategy Approved	
Infrastructure Budget Approved	
Support Strategy Approved	
New Support Structure Launched	
POC for Early Adopter 1 Completed	
POCs for Early Adopter 2 Completed	
Central Infrastructure for Enterprise Indico deployment in place	
Indico Upgrade Completed and Deployed to UN entities on Indico	
Interfaces Designed, Developed, Tested and Implemented	
Enhancements Designed, Developed, Tested and Implemented	
Indico deployed to Tranche 1 departments/entities	
Indico deployed to Tranche 2 departments/entities	
Indico deployed to Tranche 3 departments/entities	