

出國報告（出國類別：國際會議）

國際精算學會之芝加哥大會出國報告

服務機關：財團法人保險事業發展中心

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派赴國家：美國

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摘要

國際精算學會（IAA）成立於 1895 年，於 1998 年進行了新的章程改革，是專業精算學會的全球協會，為個人精算師若干特殊利益努力。IAA 的存在是為了鼓勵全球性的專業發展，使其被認為是技術上有競爭力的，專業可靠的，這將確保符合公共利益。精算專業是全球公認的金融服務產業決策過程中的主要參與者，在社會保護和風險管理領域，為整個社會的福祉做出貢獻。如同全球精算學會的組織，IAA 的任務為代表精算專業，提升其在國際領域的角色，聲譽和認可度，並在會員協會和組織的積極參與下，促進專業化，制定教育標準和鼓勵研究，以應對不斷變化的需求。實現 IAA 目標的一個關鍵要素係通過成員會議的進行，這些會議每年在世界各地舉行兩次，為許多團體提供了一個數天的機會來討論正在進行的項目並考慮新的發展。來自世界各地的精算師和專家，這些會議是她們於國際精算專業和全球金融業建立關係與合作的重要活動。

今年下半年的年會於 10 月 3 日至 8 日在美國芝加哥舉行，此次代表保險事業發展中心參與許多時下最為熱門且重要的議題討論與研究，如 **Joint meeting: Insurance Accounting Committee and the Education and Practice Subcommittee** 討論著第 4 號國際精算實務標準（ISAP 4）對國際財務報導準則第 17 號「保險合約」的指導原則、**Women Leaders in the Actuarial Profession** 代表著女性在精算領域為不可或缺一部分與其卓越專業、**Health Committee** 討論著政策辯論和健康系統研究等議題、**Big Data Working Group** 討論著資料分析專業認證等等。透過積極參與 IAA 相關活動，能夠了解全球精算相關之最新發展與研究，以促進我國於國際精算場合之能見度與影響力。

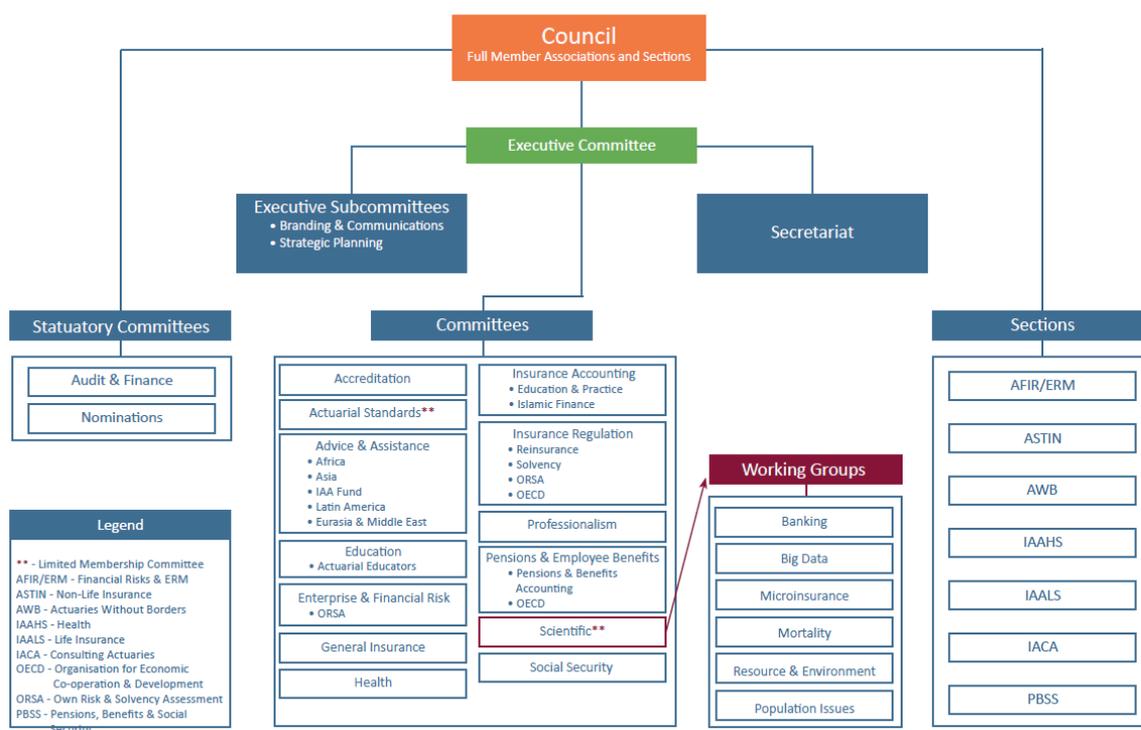
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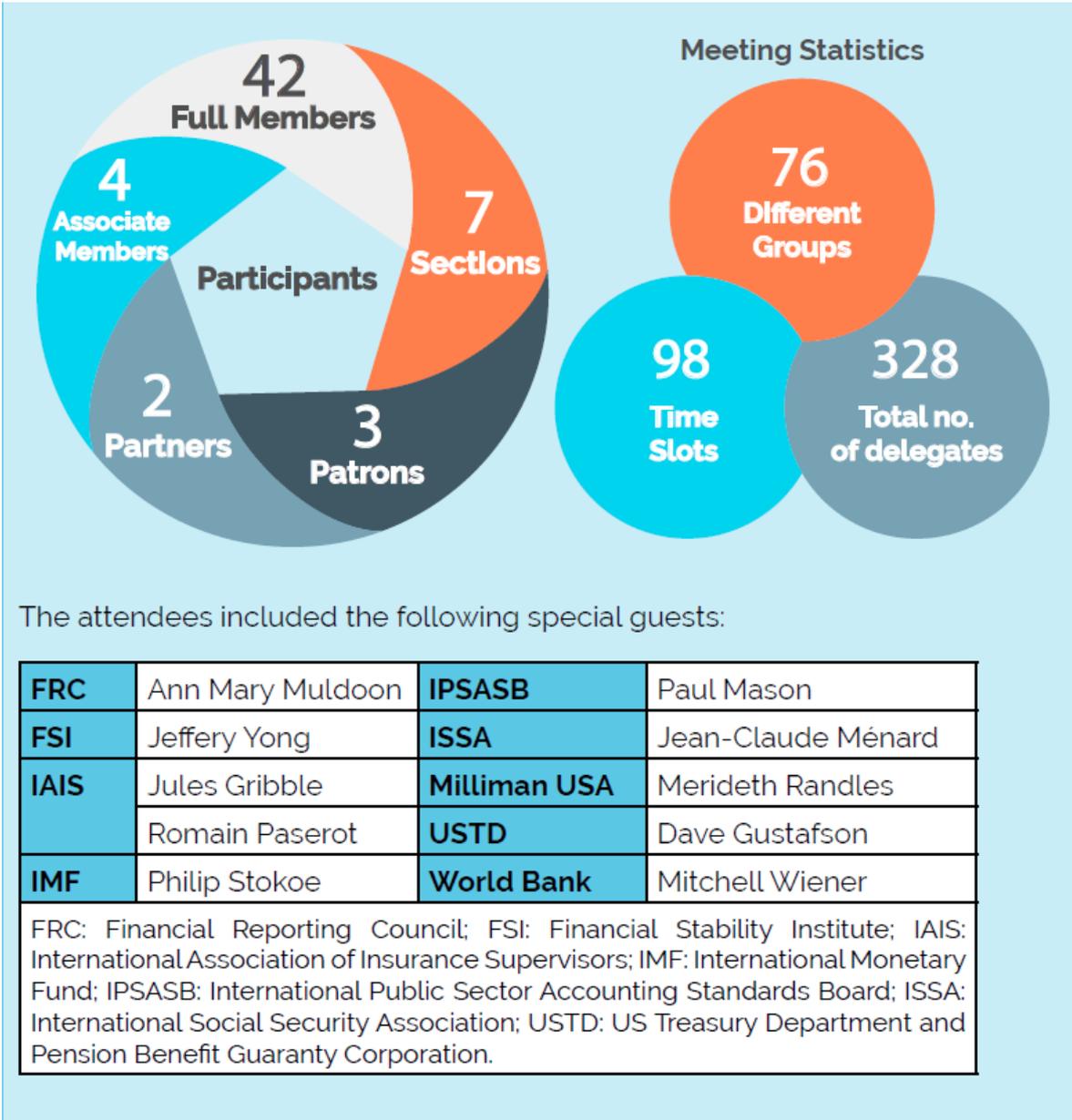
壹、前言

國際精算學會的兩個主事機構為理事會和執行委員會。IAA 理事會是 IAA 的主事機構，通過 IAA 戰略計劃實現 IAA 的願景和使命聲明。理事會通常每年在不同的國家舉行兩次會議。執行委員會由理事會選舉於促進 IAA 的運作。它全年經常開會，其主要會議與理事會會議一道一年舉行兩次。其主要任務為實現 IAA 的營運目標、擬定戰略建議和內容供理事會會議審議和監督戰略計劃的實施情況。執委會由 IAA 的所有官員和由理事會選出的八位額外成員組成。國際精算學會組織架構如下：

International Actuarial Association Organization Chart - 2016



此次年會於 10 月 3 日至 8 日在美國芝加哥舉行（議程如附件一），來自世界各地的精算師和專家，這些會議是她們於國際精算專業和全球金融業建立關係與合作的重要活動，為其提供了一個數天的機會來討論正在進行的項目並考慮新的發展。此次會議統計資訊如下：



此次代表保險事業發展中心參與許多時下最為熱門且重要的議題討論與研究，因內容甚多，以下報告內容僅針對特別重要與有趣的議題進行介紹。

貳、會議概要

一、Joint meeting: Insurance Accounting Committee and the Education and Practice Subcommittee

保險會計準則委員會旨在促進由國際會計準則制定者制定的保險公司財報製定和應用方面的精算觀點，包括但不限於在國際財務報導中編制的保險合約估計和審查。特別地，「風險調整」專著已修訂，預計 10 月份將完成最終稿，並可能意味著 2018 年初登場。國際會計準則理事會（IASB）於 2017 年 5 月頒布國際財務報導準則第 17 號「保險合約」。國際精算實務標準（ISAP）為精算師在執行與 IFRS 17 有關的精算服務時提供指導。IFRS 17 準則目的為提供全球一致的保險合約會計方法、更高的獲利透明性及具最新市場一致性資訊的保險義務。其與台灣現行會計制度之主要差異為更複雜的保險合約計算，IFRS 17 規定最佳估計負債（Best Estimate Liability）需反映未來現金流，折現率與風險調整也需考量現時市場狀況，不再適用現行 IFRS 4 的負債適足性測試。IFRS 4 亦無 IFRS 17 之分群規定，保險合約群組之定義及區分方法之選擇將成為一大難題，另外，保險合約利益將遞延於合約期間認列也必然是一大挑戰。因此 ISAP4 目的為：

- 促進精算實務標準與國際財務報導準則第 17 號於各司法區域趨於一致；
- 增加對國際財務報導準則第 17 號精算師服務的信心；
- 證明 IAA 承諾支持 IASB 的工作，按照 IAA 和 IASB 之間的合作備忘錄之設想，在國際上實現高品質，透明和可比較的財務報告。

此場會議主要針對 ISAP4 草案進行討論與修正以提供更好的實務指引。我國為迎接 IFRS 17 之衝擊亦已進行相關準備工作以協助我國保險業，其中，金管會保險局已委請財團法人保險事業發展中心組成專案小組，與中華民國精算學會及產壽險公會一同就保險業財會、精算、商品等相關之作業流程、資訊系統、監理法規制度等各影響層面，進行接軌 IFRS 17 之全面性討論以減緩所受衝擊。

二、Women Leaders in the Actuarial Profession (An interactive breakfast)

SOA 前主席 Tonya Manning 領導此次精算專業之女性領導者座談會，參與者有挪威精算學會副主席 Gunn Albertsen、南非精算學會主席 Roseanne Murphy Harris 與加勒比區精算學會前主席 Lisa Wade。她們分享在精算領域的工作經驗與歷程，亦給予其他年輕有抱負的女性專業精算師重要建議。

三、Health Committee

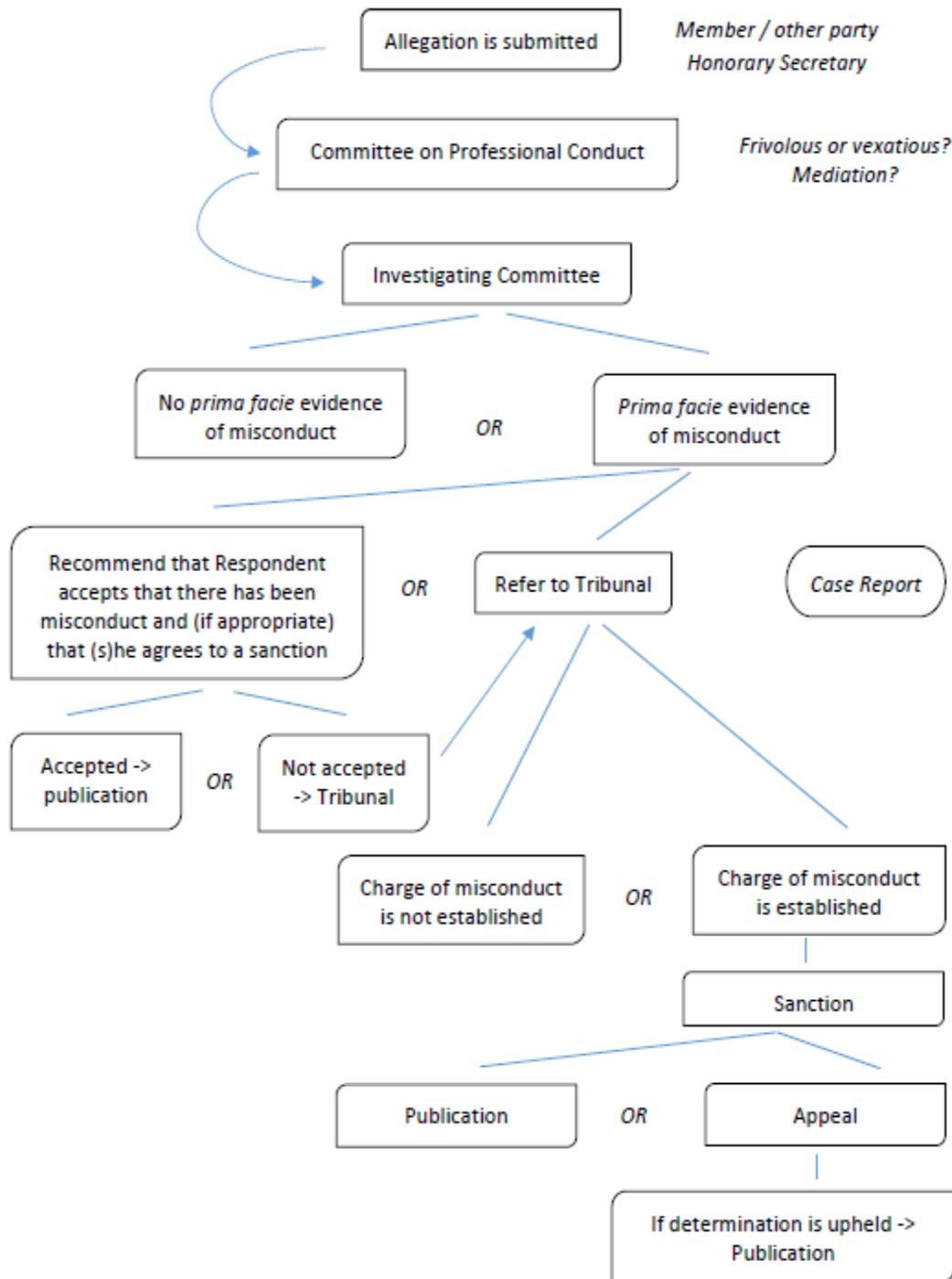
健康委員會負責代表 IAA 在國際層面討論與健康系統有關的問題，特別側重精算方面。它還旨在提高健康險精算師在政策辯論和健康系統研究方面的知名度，並通過 IAA 成員協會在健康系統領域（私人和公共）從事精算工作。

健康委員會已經開始就不同的主題發表論文，最近的是“健康險精算師和大數據”，即將出版，基於這份文件的提案也提交給柏林的 2018 年 ICA。委員會發表的論文提供了不同主題的背景，可以為成員提供有用的資訊（其中兩篇已經發表：「伊波拉病毒風險分析」和關「健康險個人特製化醫療（遺傳學）的說明」；第三，「健康照護精算師和大數據」，即將出版），該委員會亦正在撰寫一份關於醫療通膨（由美國精算師起草）的文件，這對美國和國際精算師與監管機構都是非常有用的。不像其他委員會，健康險委員會似乎只限於那些有健康保險市場的國家，其可能在未來委員會的議程中包括更多的健康問題，從而吸引更多的國家。此外，該委員會亦被邀請參加經濟合作暨發展組織的長期看護研究，該研究表明在與這個多國家機構之發展關係方面取得了進展。除了正在研究產出外，委員會亦持續兩年前開始進行關於健康險精算課程大綱草案之更新。

四、Professionalism Committee

專業委員會鼓勵和促進國際上專業精算教育和實務的適當標準的發展、維護和提升。該委員會聽取了愛爾蘭精算師學會和美國精算師學會關於不同紀律體系的介紹。在愛爾蘭，迄今為止只有 10 個紀律案件，其紀律系統如下圖。相反，**Actuarial Board for Counseling and Discipline** 設在美國精算學會內，自 1992 年成立以來，已經審理了許多案例。

Society of Actuaries in Ireland Disciplinary Scheme



自上次 IAA 會議以來，各種專業性指導文件已經獲得理事會批准。展望未來，委員會正在考慮根據對歐洲精算學會最近修訂的法規的討論，審查 IAA 內部法規中規定的 IAA 行為準則要求。但是，沒有委員會成員對目前的 IAA 行為規範要求表示擔憂。

五、Joint ORSA subcommittee of IRC and EFRC

作為 IAA 的一個小組委員會，致力於促進 ORSA 的精算觀點，提升精算師執行 ORSA 的能力。以下為成員應 IAA 保險法規委員會與企業金融風險委員會之 Joint ORSA Subcommittee 要求所提供之國際 ORSA 法規要求圖表：

ORSA Regulatory Requirements	Description	Australia	Bermuda	Canada	China	ESA	Japan	Mexico	Singapore	South Africa	Switzerland	United States
1 Reporting requirement	Common name for the requirement.	IAAP	CSIA	ORSA	SARIMA Solvency Aligned Risk Management Requirement and Assessment	ORSA	ORSA	ARIS (Autor Evaluación de Riesgos y Solvencia Institucional)	ORSA	ORSA	ORSA	ORSA
2 Effective date	Date on which the requirement becomes effective.	01-Jan-13	01-Jan-11	01-Jan-14	2015-2-13(with transitional period)	01-Jan-16	27-Mar-15	April 4, 2015; the first one must be presented in the first half of 2015, evaluating the whole 2015.	01-Jan-14	01-Jan-16	01-Jan-16	1-Jan-15 (will vary by state)
3 Basis for requirement	Relevant law or regulation that provides the regulatory authority for requiring regulatory compliance.	Life Insurance Act: http://www.comlaw.gov.au/series/C2006A04880 Life Insurance Regulations: http://www.comlaw.gov.au/series/F1998B00251 Re Insurance Act: http://www.comlaw.gov.au/series/C2006A04880 General Insurance Act: http://www.comlaw.gov.au/series/C2014C00564 General Insurance Regulations: http://www.comlaw.gov.au/series/F2013C02033	CISA 2011 Instructions Handbook http://www.bma.bm/documents/centre-reporting-forms-and-guidelines/2014-01-17	Guideline E-19 ORSA (http://www.conf-bc.ca/Reg/Docs/etb.pdf)	Law of Insurance (Latest version: 3rd March 2008)	Solvency II Directive (2009/138/EC) DELEGATED REGULATION (EU) 2015/26 Both can be found @ http://eur-lex.europa.eu/thesaurus/taxonomy/solvency/index_en.htm (together with their amendments)	Insurance Business Act EPOA Guideline can be found @ http://www.epra.com/~/media/epra/~/media/epra/Guidelines/EPOA_Guidelines_en_ORSA_EN.pdf	General Law of Insurance and Bonds Institutions, article 68, section 1-a through e http://www.cof.gob.mx/CISELECTRONICA/LSI/LSI_3_1_53_Single_Notice_of_Insurance_and_Bonds_chapter_3.2_v03_3.2.5 thro_3.2.9 http://www.cof.gob.mx/CISELECTRONICA/CISF/CISF3_2_and_7_A.2_For_Dynamic_Solvency_test http://www.cof.gob.mx/CISELECTRONICA/CISF/CISF7_4	MAU Notice 126 in conjunction with section 64(2) of the Insurance Act Cap. 442	Insurance Act 2015, expected to be enacted in H2 2015, along with supporting subordinate legislation (currently under development)	Swiss Federal Insurance law ("AVG")	Individual state laws (NAC model law "Risk Management and Own Risk and Solvency Assessment Model Act")
4 Applicability threshold	Size or type of insurer to which the regulatory requirement applies.	All Insurers	Class F, 3A, Class 3B, and Class 4 Insurers http://www.bma.bm/news/announcements/2014/04/17/041714.htm	All Federally regulated Canadian operations of foreign life and property and casualty companies operating in Canada on a branch basis, as well as external benefit societies operating in Canada, except for regulated insurance holding companies and non-operating insurance companies	1. the insurance companies and branches of foreign insurance companies legally incorporated under the approval of CIRC 2. CIRC will categorize companies into Class I insurance companies and Class II insurance companies according to the years of establishment, business size (premium and/or total assets) and risk features, different solvency risk management requirements are proposed respectively.	All Insurers and Insurance Groups subject to the Solvency II directive Implementations may vary in respect of entities not falling under the scope of the Solvency II directive still applying some or all of those rules	All Insurers and Insurance Groups	All Insurance and Bond companies.	Applies to any licensed insurer (except a captive mutual insurer).	Every insurer (solo requirement) and Insurance group (group requirement).	Insurance Groups and solo Insurers category 1, 2 and 3. Insurers categories 4 and 5 are exempt	Insurers with gross premium over US\$500 million (including affiliate reinsurance assumed) or Insurance Groups with gross premium over US\$1 billion
5 Sufficiency of filing another country's ORSA report	Whether domestic regulators would allow the submission of a foreign ORSA report to comply with the requirement.	No	Yes	No	No	No, unless based on an established equivalence decision that applies to ORSA as well	Yes, with some conditions (It covers ORSA on Japanese subsidiary/branch, etc.)	Domestic Regulator, so far, DOES NOT allow the submission of a foreign ORSA report to comply with the requirement.	No	No	No	Yes, if it covers requirements in US: CISA Guidance Manual

OSIA Regulatory Requirements	Description	Australia	Bermuda	Canada	China	EUA	Japan	Mexico	Singapore	South Africa	Switzerland	United States	
6	Requirement for group reporting with type of group if required	For this purpose, an insurance group is defined as a collection of affiliated insurance entities which a composite group is defined as a group of both insurance and non-insurance entities.	No, but can rely on Group ICAAP if it meets all AFSA regulatory requirements	Yes	OSIA can be prepared either on individual insurer basis or on group basis. Group OSIA should give adequate consideration to business and risk profile of individual insurers in group and the particular circumstances of the markets in which it operates. The components of the Group OSIA that are used to support an individual insurer's OSIA should be consistent with expectations of F-15.	1. Insurance groups shall abide by SARMAA. 2. CICRC will conduct regulatory assessment to management capability of insurance groups on an annual basis, to determine their control risk. 3. The assessment criteria for solvency risk management capability of insurance groups will be provided additionally. 4. An insurance group shall calculate minimum control risk capital according to appropriate assessment results and relevant requirements of CICRC. Specific calculation criteria will be provided additionally.	OSIA can be prepared either on individual insurer basis or on group basis. If the individual OSIA is not carried out then Group OSIA should give adequate consideration to the reason for the choice of how the governance requirements are met at the level of these undertakings and in particular how the administrative, management or supervisory bodies (AMS: the body that, under Solvency II, has ultimate responsibility for running the entity) of the subsidiaries are involved in the assessment process and approval of the outcome, and a description of how the single OSIA document is organized in order to allow the group supervisor to separate individual assessments for the other supervisors	Insurance group holding company is required to submit OSIA report.	No	An insurer which belongs to a group may make use of its group's OSIA report, provided the required details specific to the insurer, is clearly documented in the report	Where entities form an insurance group, an OSIA should also be produced at group level. However, insurance groups could request a dispensation from the Regulator not to produce OSIA supervisory reports for each entity, but a single group supervisory report providing enough information for the Regulator to exercise its supervisory duties in respect of risk entities approved under international dispensation.	A single Group OSIA must be of such granularity to include specific information on the "most important" group entities, including all entities that are under solo supervision. It should also include information on material off-balance sheet positions	Yes
7	Requirement applicability to branches	Whether the requirement applies to branches of legal entities or not.	Required for all Insurers licensed in Australia	Yes, given that branches roll up into legal entity	Required for all Insurers licensed in Canada (including branches)	Required for all Insurers licensed in China	Required for all Insurers based on proportionality. Branches not covered in the solo/group OSIA	The Mexican legislation does not allow the establishment of foreign branches. Participation of foreign insurers in the Mexican insurance and surety markets is permitted only through the establishment of domiciled subsidiaries. Subsidiaries have to comply with the same requirements that these branches will be required to conduct as domestic companies. Required for all Insurers licensed in Mexico	See applicability threshold	Currently no branches of foreign Insurers are allowed in South Africa. However, there is a proposal to allow branches of foreign reinsurers to operate in South Africa. It would then be expected that these branches will be required to conduct an OSIA.	Applies to Insurers of category 1, 2 and 3 (but not 4 and 5). Independent of branch status	Depends on state law for the branch's state of "entry" into the U.S. Most states treat branches using their state as the state of entry as if the branch were a domestic insurer in their state.	
8	Basis of regulatory guidance: OSIA process or regulatory reporting of OSIA		Two separate documents are produced: (1) a Summary Statement, which summarizes the capital assessment and management process, and (2) an annual report on the implementation of the ICAAP	OSIA Summary Report needs to be filed (online) content is prescribed	OSIA expects an insurer to have processes in place to conduct an OSIA	CICRC assesses the Insurers and issues SARMAA report	Primary focus: helping decision making by the AMSB. The OSIA also should be reported to the supervisor	Comprehensive Guidelines for Supervision of Insurance Companies "Does an insurance company make OSIA periodically and maintain risk and capital control process, to monitor whether 'best' satisfies both the requirement on economic capital and the capital requirement based on solvency margin regulation?"	CSEF expects an insurer to have processes in place to conduct an OSIA	The guidelines focus on what is to be achieved in the OSIA rather than how it is to be performed.	Both. A process and corresponding process description must be in place (focused on the reporting process). Also a report must be produced and signed off at executive level.	Report	
9	Recipient of OSIA report as per regulatory guidance	Primary audience of the OSIA report.	The ICAAP is approved by the Board. A copy of the ICAAP Report is to be provided to the Regulator annually. The ICAAP Summary Statement is to be provided to the Regulator on request	OSIA must be presented to the board and a copy submitted to the Bermuda Monetary Authority	OSIA report to the Board, Key Metrics Report to CSEF	CICRC issues SARMAA report and issues the solvency risk management capability of insurer by SARMAA report. Insurer's capital control risk is determined by SARMAA report results.	Report to AMSB Report to local and Group Supervisor Summary information of certain aspects to the Public.	Report to Board, Report to JSA (see also A.12)	OSIA must be presented to the board and a copy submitted to the supervisor (Comision Nacional de Seguros y Fianzas)	OSIA report is approved by the board of directors.	Management information on risk and capital management should be provided to senior management and the Board. OSIA report to the supervisor.	Report signed by at least one Group executive. Report may be a full or summary report. Board must be involved in the OSIA process.	Lead state regulator

OSIA Regulatory Requirements	Description	Australia	Bermuda	Canada	China	EUA	Japan	Mexico	Singapore	South Africa	Switzerland	United States	
10	Purpose of the OSIA report	For example, to allow Boards to take key decisions, to inform Boards, to report the results of OSIA processes to the regulator.	The Commercial Insurer's Solvency Self Assessment (CSSA) is a regime that requires insurers to perform an assessment of their own risk and solvency requirements. This provides the BMA with the insurer's perspective of the capital resources (inferred to a CSSA capital) necessary to achieve its business strategies and remain solvent given its risk profile, as well as insight into the risk management and governance procedures surrounding this process. Risk profile considers all reasonably foreseeable material risks arising from its operations or operational environment.	In conducting its OSIA, an insurer should determine its own capital needs and establish its internal targets based on an internal assessment of all material risks, including the results of the enterprise risk management process	CICRC assesses the risk management capability and the level of control risk of the insurer, determines the MC of control risk of the insurer. As a result, MC of control risk will directly impact the solvency ratio and Integrated Risk Rating (IRR) of the insurer.	Annual. In the case of any significant changes to the solvency risk management capability of an insurance company within the year, CICRC may conduct the assessment again.	Annual or upon significant change in risk profile	Document the OSIA process and help decision making by the Board. Provide information to the Supervisor on the OSIA process and results. The undertaking should take into account the results of the OSIA and the insights gained during the process of this assessment in at least: a) its capital management; b) its business planning; c) its product development and design	To make suitable risk control and keep enough solvency level over time. (The Comprehensive Guidelines for Supervision of Insurance Companies)	To present to the board "The level of compliance of the operational areas of the risks, targets, policies and procedures for overall risk management – an analysis of the overall solvency margin taking into account their specific risk profile, the risk tolerance limits approved by the board of directors and its business strategy, including a review of potential future impacts the solvency based on the performance of the investment, technical reserves, reinsurance, guarantees, warranties, Solvency Capital and minimum capital requirements, the extent to which risk profile deviates from the assumptions underlying the calculation of RCS is based, regardless of the	To assess the adequacy of risk management, and current and projected future solvency position with a time horizon which is consistent with that used in its business planning.	The objectives of the OSIA include to ensure that the group's board of directors and senior management understand the risk that originates from its strategic business plan and its overall capital requirements, contribute to the improvement of risk management and the harmonization with liquidity and capital management, and develop and implement appropriate control measures	To inform the regulator about the insurer's risks and solvency position. The Commissioner will utilize the OSIA Summary Report to gain a high-level understanding of the insurer's OSIA.
11	Frequency of the OSIA report	Requirement for the frequency of OSIA reporting.	Annual	Annual	Annual	Annual	Annual	Annual	Tier 1 Insurer: annually (at least) Tier 2 Insurer: every third year	Insurers should produce the full assessment at least annually and when there is a significant change in the insurer's risk profile due to internal or external conditions changing.	Insurers should produce the full assessment at least annually and when there is a significant change in the insurer's risk profile due to internal or external conditions changing.	Annual report, although updates of group capital assessment can be requested in the interim if material changes occur	
12	Role of the Board with respect to OSIA.	For example, approve the OSIA report, review the OSIA report, receive the OSIA report.	Approve ICAAP	Review CSSA	Insurer's Board should review and discuss OSIA as well as any changes to OSIA. Board should understand decisions, plans and policies being undertaken by Senior Management with respect to OSIA and its potential impacts on the insurer. It should probe, question and seek assurance from Senior Management that these are consistent with Board's own decisions and board-approved business and risk strategy of the insurer, and that corresponding internal controls are sound and being implemented in an effective manner.	The board of directors takes the ultimate responsibilities for the effectiveness of the overall risk management framework and the related decisions.	The AMSB should take active part in the OSIA, use OSIA results in decision making and approve the OSIA	Execute OSIA under responsibility of Board	"Have a presentation of the ASIF report to define and adopt the necessary measures to correct the shortcomings in the comprehensive risk management. If any short have been detected as a result of the completion of the ASIF, the board of directors shall instruct and monitor the operational area responsible (institution or natural company to adopt such measures."	The Board takes responsibility for the OSIA.	The Insurer/Insurance group should ensure that its Board and senior management take an active part in the OSIA including providing steering on how the assessment to be performed and challenging its results	The Board must ensure that OSIA is integrated into the strategy setting and planning and must be aware of (and responsible for) the content in the OSIA report. Processes whose outcome form part of the report (planning, risk reporting, capital management) must be reviewed by the board and the board must ensure that these are appropriate for steering.	Receive a copy of the OSIA report
13	Required quantitative assessment of risk and solvency	Whether quantitative assessments are required, encouraged, or neither.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Required	Yes	
14	Linkage to required regulatory capital	Whether the alignment between "own" required capital and jurisdiction's required capital.	Yes	No (ESCA capital is the actual requirement)	Yes	Yes	Yes	Yes	Yes	Yes	The Insurer can choose its own definition of required capital, but it must be able to show an assessment of the material differences between its own required capital to the regulatory required capital	Yes	No

OSRA Regulatory Requirements	Description	Australia	Bermuda	Canada	China	EEA	Japan	Mexico	Singapore	South Africa	Switzerland	United States
15	Required stress/scenario testing	Yes	Yes, for all material risks	Yes	Yes	EOIPA Guidelines (see point 3) require stress/scenario testing where appropriate	Yes	Yes	Yes	Required	Yes	Yes, for all material risks.
16	Horizon for forward looking assessment	Three year capital projections	Planning horizon	Planning horizon	3-year capital projections Stress test under Pillar I (annual basis, including base scenario and stress scenario. Under base scenario, insurance company needs to project the solvency ratio for the next two accounting years. Under stress scenario, insurance company needs to project solvency ratio for the next accounting year. Pillar II: Life & Health insurance companies should test regular cash flow stress test, which includes base scenario and stress scenario. Cash flow stress test is part of liquidity risk management tools.	The undertaking should ensure that its assessment of the overall solvency needs is forward looking, including a medium term or long term perspective as appropriate (EOIPA 1.2). As the OSRA should pass the test, so it should also be used by the company in its planning, the horizon probably usually is consistent with the business planning period	3 to 5 years as example	"long enough to capture the adverse effects thereof, so as to capture the requirements of the administration to these effects. The projection period for life insurance will be at least five years, and for the non life, at least two years"	Yes to be consistent with the business planning.	Time horizon should correspond with the business planning cycle. (Typically 3 - 5 years)	Planning horizon, at least three years	Business planning horizon
17	Valuation basis	Australian	Economic Balance Sheet	IFRS (same basis of reporting for public and statutory purposes)	C-RDS basis: GAAP based assets and liabilities valuation approach, excluding a few adjustments to the asset and liability measurement standards made by the CIRC for the purpose of regulation on solvency	Solvency II basis can be used, or any basis that the AMBS considers more appropriate than the Solvency II basis	Japanese Statutory (and Economic (recommended))	Mexican Statutory Accounting, similar to Solvency II (economic basis)	IFRS (same basis of reporting for public and statutory purposes)	The chosen basis should be used consistently throughout the insurer/insurance group's own assessment of overall solvency needs. The insurer/insurance group should provide an assessment of the material differences between the chosen basis and the Solvency II basis.	Insurer's choice, but must disclose	Insurer's choice, but must disclose
18	Capital assessment basis (time horizon, risk metric)	Regulatory capital (risk-based approach per Australian Regulations) plus the internal target capital above regulatory capital (unspecified)	Regulatory (1 Year, 99.7%) and Own Risk Assessment	Insurers' capital assessments will reflect their own choice of data sets, distributions, measures, confidence levels, time horizons, valuation approaches, financial tools and methodologies, appropriate to their own unique profile	Solvency II basis can be used, or any basis that the AMBS considers more appropriate than the Solvency II basis	Japanese Statutory (and Economic (recommended))	Regulatory (1 year, 99.5% Val) and Own Risk Assessment	Regulatory (1 year, 99.5% Val) and Own Risk Assessment	The insurer can choose its own basis for risk measurement, but it must be able to show an assessment of the material differences between its own required capital in the regulatory required capital	Insurers' capital assessments will reflect their own choice of data sets, distributions, measures, confidence levels, time horizons, valuation approaches, financial tools and methodologies, appropriate to their own unique profile	Insurer's choice, but must disclose	Insurer's choice, but must disclose

OSRA Regulatory Requirements	Description	Australia	Bermuda	Canada	China	EEA	Japan	Mexico	Singapore	South Africa	Switzerland	United States
19	Required documentation of OSRA process	Yes - ICAAP Summary Statement and annual ICAAP report	Yes	Yes - OSRA processes and results	No - CIRC assesses the insurer and issues SAMIRA report annually	OSRA Policy: a proper record of each OSRA and internal report and a possibly different report to the supervisor of each OSRA	Yes	Yes	An insurer shall support the measurement of its risk with documentation that provides detailed descriptions and explanations of the risks covered, the measurement approaches used and the key assumptions made. Such documentation should be signed or verified by	The insurer (group) should have in place at least the following documentation on the OSRA: a) OSRA policy; b) Record of each OSRA; c) Internal management information on risk and capital management (internal report on OSRA); and d) OSRA supervisory report.	Yes	Must document the OSRA process and results internally (for possible supervisory review)
20	Relevant guidance	LPS 110 OSR 110 CPS110	OSRA 2011 Instructions Handbook	OSR Guideline E-29	Solvency Regulatory Guidelines No. 11: Solvency Aligned Risk Management Requirements and Assessment	EOIPA_Guidelines_on_O RSA_EN.pdf	Comprehensive Guidelines for Supervision of Insurance Companies (I-3-5)	Only the OSR already mentioned	http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	Position Paper 34 (v-7) - Own Risk and Solvency Assessment Position Paper 107 (v-6) - Own Risk and Solvency Assessment - Further Guidance	Currently in development. To be released by Q3 2015	NAC OSRA Guidance Manual - July, 2014. Also the applicable state laws).
21	Regulatory website with guidance links	LPS 110: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf OSR 110: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf CPS110: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf Internal Capital Assessment: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	OSRA 2011 Instructions: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf Handbook: http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	OSR Guideline E-29: http://www.osr.ca/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	SAMIRA report: http://www.circ.gov.cn/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	EOIPA Guidelines on OSRA EN.pdf: http://www.eoipa.eu/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	Comprehensive Guidelines for Supervision of Insurance Companies (I-3-5): http://www.fsa.gov/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	Only the OSR already mentioned: http://www.cmf.gov.mx/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	http://www.mas.gov.sg/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	Position Paper 34 (v-7) - Own Risk and Solvency Assessment: http://www.fsa.gov/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf Position Paper 107 (v-6) - Own Risk and Solvency Assessment - Further Guidance: http://www.fsa.gov/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf	Currently in development. To be released by Q3 2015	NAC OSRA Guidance Manual - July, 2014. Also the applicable state laws): http://www.nac.org/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf
22	Other relevant information.	For example, whether application of guidance varies by country within region, other key information.				The Solvency II directive is transposed into the legislation of each Member State, the local implementations may vary						All groups must also submit a Form F - Enterprise Risk Report, which may be partially satisfied by referencing Form F material already supplied via an OSRA report (for those subject to an OSRA requirement, http://www.nac.org/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf and http://www.nac.org/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf respectively of the following link http://www.nac.org/~/media/Insurance/Regulation/2015/03/20150328_PSA%20110.pdf)
23	Last updated by respondent/reviewer	6th of November, 2016	8th of November, 2016	8th of November, 2016	22nd of April, 2015	10th of November, 2016	13th of November, 2016	11th of November, 2016	6th of May, 2015	27th of May, 2015	6th of May, 2015	10th of November, 2016

六、Big Data Working Group

科學委員會的大數據工作小組致力於識別和討論精算師使用大數據的機會和做法。大數據是精算師日益關注的主題，使得這個委員會的工作非常有意義。高等分析教育項目調查草案已經完成並進行了討論。針對德國精算學會建議創造一個國際分析證書進行大量的討論，但工作小組部分成員質疑這個想法的價值，因為某些組織已經有了自己的認證方法（如 2018 年 SOA ASA 新制之預測分析考試）。德國精算學會的想法是創立一個類似於 CERA 的國際機構。然而，與風險管理不同的是，資料分析是一個涉及多學科的廣泛主題。支持者認為精算專業固有的專業性是有價值的，但尚無資料分析背景下之專業化定義。預計在未來的會議上還將就此議題進行進一步討論。

參、心得與建議

IAA 通過成員會議的進行，為許多團體提供了一個數天的機會來討論與進行最新發展的精算保險議題，來自世界各地的精算師和專家，這些會議是她們於國際精算專業和全球金融業建立關係與合作的重要活動，而加強與國際保險專業機構及監理機關之聯繫互動，促使台灣保險業與國際之接軌與交流為保發中心宗旨之一，因此積極派員參與 IAA 的活動實為重要且必要。

國際財務報導準則第 17 號「保險合約」(IFRS17) 於今 (2017) 年 5 月發布，並預計於 2021 年 1 月 1 日生效，我國則預定 2024 年後採用，其對我國之影響甚為重大，為協助我國保險業及早進行相關準備工作，金管會保險局已委請財團法人保險事業發展中心組成專案小組，與中華民國精算學會及產壽險公會一同進行接軌 IFRS 17 之全面性討論以減緩所受衝擊。IAA 已持續針對 IFRS 17 之實務準則進行討論與研究，參與 IAA 之 IFRS 17 相關討論會議，可藉此提供我國接軌 IFRS 17 之國際經驗所面臨的問題與解答。

保險業自我風險及清償能力評估 (Own Risk & Solvency Assessment) 目的為了建立風險、資本需求與自有資本間的橋樑，藉此提升風險意識並改善風險治理過程與方法。我國亦在 105 年第一次提交自我風險及清償能力評估於主管機關，保發中心已被任擔任檢閱並提出相關分析報告。IAA 致力於促進 ORSA 的精算觀點，提升精算師執行 ORSA 的能力，參與其相關活動能提升我國 ORSA 報告之品質與檢閱分析能力。

估計未來事件為保險業的主要元素，為衡量這些事件的風險與價值，大量資料之量 (Volume, 資料大小)、速 (Velocity, 資料輸入輸出的速度) 與多變 (Variety, 多樣性) 已成為保險公司的重要工具。保戶互動、社交媒體等大量數據來源使得大數據於保險業更具吸引力。大數據技術被全面應用於確定風險，索賠和增強客戶體驗，使保險公司能夠獲得更高的預測準確性。IAA 致力於識別和討論精算師使用大數據的機會和做法，藉由參與其活動，能促進我國精算保險領域於大數據之發展與應用。



SCHEDULE

**CHICAGO WESTIN RIVER NORTH
HOSPITALITY DESK
RIVER LEVEL II – GRAND COURT**

Wednesday, October 4 08:00 – 17:00
 Thursday, October 5 08:00 – 17:00
 Friday, October 6 08:00 – 15:30
 Saturday, October 7 08:00 – 14:00

TUESDAY, OCTOBER 3		
MEETING TIME ONLY	GROUP	MEETING ROOM
08:00 – 17:00 (7:00 hrs.)	Joint meeting: Insurance Accounting Committee and the Education and Practice Subcommittee	Renaissance Chicago Downtown Hotel Cloud Gate 3 & 4
08:30 – 18:00 (7:00 hrs.)	Seminar: International Insights on Mortality, Population and the Public Interest Click here for the agenda \$135 CAD Registration fee applicable	Astor Ballroom
14:00 – 18:00	The Actuary in Banking Seminar Event hosted by the Actuarial Society of South Africa Click here to register!	Renaissance Chicago Downtown Hotel Cloud Gate 5
17:30 – 19:30 (2:00 hrs.)	Paper presentation: * Actuaries in inclusive insurance project Microinsurance Working Group; IRC, PC and the Scientific Committee	Renaissance Chicago Downtown Hotel Cloud Gate 3 & 4

WEDNESDAY, OCTOBER 4		
MEETING TIME ONLY	GROUP	MEETING ROOM
07:30 – 09:00 (1:30 hrs.)	Breakfast: Women Leaders in the Actuarial Profession	Grand Ballroom B
09:30 – 10:15 (0:45 hr.)	Welcome Session	Grand Ballroom C
10:30 – 12:15 (1:45 hrs.)	Round Table: FMA's and public policy	Promenade C
10:30 – 12:15 (1:45 hrs.)	Round Table: Diversity in the profession	Grand Ballroom B
10:30 – 12:15 (1:45 hrs.)	Round Table: Actuarial Research	Grand Ballroom A
12:30 – 13:45 (1:15 hrs.)	Lunch	Grand Ballroom C
12:30 – 13:45 (1:15 hrs.)	Branding and Communications Subcommittee of the EC—Lunch Meeting	Promenade A
12:30 – 13:45 (1:15 hrs.)	PIWG & MWG Post Seminar—Lunch Meeting *	Rogers Park
13:30 – 15:30 (2:00 hrs.)	Health Committee	Promenade B
14:00 – 15:30 (1:30 hrs.)	Chairs of the A&A *	Washington Park
14:00 – 17:30 (3:00 hrs.)	Executive Committee (<i>Part I</i>) *	Executive

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14:00 – 18:30 (4:00 hrs.)	Actuarial Standards Committee (<i>Part I</i>)	Grand Ballroom A
14:00 – 18:30 (4:00 hrs.)	Mortality Working Group	Grant/Lincoln
15:30 – 16:00 (0:30 hr.)	Coffee Break	Grand Court Foyer
16:00 – 18:00 (2:00 hrs.)	Advice and Assistance Committee	Promenade C
16:00 – 18:00 (2:00 hrs.)	Pensions and Benefits Accounting Subcommittee of the PEBC	Promenade B
18:00 – 20:00 (2:00 hrs.)	Nominations Committee Dinner Meeting *	Promenade A
20:30 – 22:00 (1:30 hrs.)	First Time Attendees Reception *	Presidential Suite 19th Floor

THURSDAY, OCTOBER 5		
MEETING TIME ONLY	GROUP	MEETING ROOM
07:00 – 08:00 (1:00 hr.)	Arrival tea and coffee	Grand Court Foyer
07:00 – 08:30 (1:30 hrs.)	IAALS Committee Breakfast Meeting *	Rogers Park
08:00 – 10:00 (2:00 hrs.)	Education Committee	Grand Ballroom A
08:00 – 10:00 (2:00 hrs.)	Population Issues Working Group	Grant/Lincoln
08:00 – 10:00 (2:00 hrs.)	Banking Working Group	Promenade B
08:30 – 10:30 (2:00 hrs.)	Development of Sections Task Force * (Including In-room coffee break)	Jackson Park
10:00 – 10:30 (0:30 hr.)	Coffee Break	Grand Court Foyer
10:30 – 12:30 (2:00 hrs.)	Audit and Finance Committee *	Washington Park
10:30 – 12:30 (2:00 hrs.)	Accreditation Committee	Grand Ballroom A
10:30 – 12:30 (2:00 hrs.)	Resource and Environment Working Group	Rogers Park
11:00 – 12:30 (1:30 hrs.)	ISAP 4 Task Force of the ASC	Promenade A
11:00 – 12:30 (1:30 hrs.)	CERA Review Panel **	Promenade C
12:30 – 13:45 (1:15 hrs.)	Speed Networking Lunch	Grand Ballroom C
12:30 – 13:45 (1:15 hrs.)	ICA2018 International Steering Committee Lunch Meeting *	Grant/Lincoln
14:00 – 15:30 (1:30 hrs.)	IACA Committee	Promenade A
14:00 – 18:00 (3:30 hrs.)	Professionalism Committee	Grand Ballroom A
14:00 – 18:30 (4:00 hrs.)	CERA Treaty Board **	Promenade C
14:00 – 18:30 (4:00 hrs.)	Pensions and Employee Benefits Committee	Grand Ballroom B
14:30 – 15:30 (1:00 hr.)	Africa Subcommittee of the A&A	Jackson Park
15:30 – 16:00 (0:30 hr.)	Coffee Break	Grand Court Foyer
16:00 – 17:00 (1:00 hr.)	Latin America Subcommittee of the A&A	Jackson Park
16:00 – 18:00 (2:00 hrs.)	Chief Executive Officers	Rogers Park
16:00 – 18:00 (2:00 hrs.)	Joint ORSA Subcommittee of the IRC and EFRC	Promenade B
16:00 – 18:00 (2:00 hrs.)	Insurance Accounting Committee (<i>Part I</i>)	Grant/Lincoln

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20:00 – 22:00 (2:00 hrs.)	Small Association Representatives Reception	Presidential Suite 19 th Floor
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FRIDAY, OCTOBER 6

MEETING TIME ONLY	GROUP	MEETING ROOM
07:00 – 08:00 (1:00 hr.)	Arrival tea and coffee	Grand Court Foyer
07:00 – 08:00 (1:00 hr.)	Small Association Representatives Breakfast	Promenade A
08:00 – 10:00 (2:00 hrs.)	Big Data Working Group	Grand Ballroom B
08:00 – 11:45 (3:15 hrs.)	Social Security Committee	Promenade B
08:00 – 12:30 (4:00 hrs.)	Insurance Regulation Committee	Grand Ballroom A
08:00 – 12:30 (4:00 hrs.)	Section Chairs and Treasurers *	Jackson Park
09:00 – 10:00 (1:00 hr.)	ICA2018 Bursary Task Force *	Rogers Park
09:00 – 12:30 (3:00 hrs.)	General Insurance Committee	Grant/Lincoln
10:00 – 10:30 (0:30 hr.)	Coffee Break	Grand Court Foyer
10:30 – 12:30 (2:00 hrs.)	Insurance Accounting Committee (<i>Part II</i>)	Grand Ballroom B
12:30 – 13:45 (1:15 hrs.)	Lunch	Grand Ballroom C
12:30 – 15:15 (2:45 hrs.)	Strategic Planning Subcommittee of the EC Lunch Meeting	Promenade A
12:30 – 15:15 (2:45 hrs.)	MOCE Group—Lunch meeting	Promenade B
14:00 – 15:30 (1:30 hrs.)	ISAP 6 Task Force of the ASC	Promenade C
14:30 – 15:30 (1:00 hr.)	AWB Section Meeting	Jackson Park
15:30 – 16:00 (0:30 hr.)	Coffee Break – End of Day	Grand Court Foyer
15:30 – 18:00 (2:30 hrs.)	Leaders Forum * (Including In-room coffee break)	Grand Ballroom A
Coach departures between 18:30 and 18:45	Official Dinner Hosted by: SOA, CAS, CCA and ACOPA Dress code: Cocktail Attire	Art Institute of Chicago

SATURDAY, OCTOBER 7

MEETING TIME ONLY	GROUP	MEETING ROOM
07:00 – 08:00 (1:00 hr.)	Arrival tea and coffee	Grand Court Foyer
07:00 – 09:00 (2:00 hrs.)	Scientific Committee Breakfast Meeting	Jackson Park
08:00 – 09:30 (1:30 hrs.)	PBSS Committee *	Rogers Park
08:00 – 10:00 (2:00 hrs.)	Enterprise and Financial Risk Committee	Promenade A
08:00 – 12:30 (4:00 hrs.)	Actuarial Standards Committee (<i>Part II</i>)	Grant/Lincoln
08:00 – 12:30 (4:00 hrs.)	Education and Practice Subcommittee of the IAC	Promenade C
08:30 – 12:30 (3:30 hrs.)	Presidents Forum	Grand Ballroom A&B
09:45 – 10:45 (1:00 hr.)	Joint OECD Subcommittee of the PEBC and IRC (Includes In-room coffee break)	Jackson Park
10:00 – 10:30 (0:30hr.)	Coffee Break	Grand Court Foyer
11:00 – 12:30 (1:30 hrs.)	IAAHS Committee *	Rogers Park



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12:30 – 13:45 (1:15 hrs.)	Lunch – Guest Speaker Chris Van Kooten, MBA, FCIA, FCAS Managing Director, Guy Carpenter & Co.	Grand Ballroom C
14:00 – 18:00 (3:30 hrs.)	Council	Grand Ballroom A&B
15:30 – 16:00 (0:30 hr.)	Coffee Break	Grand Court Foyer
19:00	Past Presidents Dinner *	Offsite

SUNDAY, OCTOBER 8

MEETING TIME ONLY	GROUP	MEETING ROOM
07:30 – 10:30 (3:00 hrs.)	Executive Committee <i>(Part II)</i> * Breakfast Meeting	Grant
08:30 – 12:30 (4:00 hrs)	Standard Setters Round Table	Lincoln

SPONSORS

SEMINAR: International Insights on Mortality, Population and the Public Interest	  
Official Dinner	   

MEETINGS IDENTIFIED BY:
 * LIMITED TO COMMITTEE MEMBERS ONLY
 ** LISTED FOR INFORMATION ONLY

ACRONYMS	
ASC—Actuarial Standards	IAC—Insurance Accounting
A&A—Advice and Assistance	IRC—Insurance Regulation
EFRC—Enterprise and Financial Risk	PEBC—Pensions and Employee Benefits
EC—Executive Committee	PC—Professionalism



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