International Society for Intelligent Construction

Strategic Plan 2020 – 2024
Revision 6

ISIC Executive Committee

December 29, 2021

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Introduction

This plan reaffirms the mission and vision of the International Society for Intelligent Construction (ISIC), prioritizes strategies, and reconfirms values to maintain while working towards achieving the vision.

This strategic plan acts as a road map to identify the route to get where ISIC wants to go – the vision for a better future. It also serves to help coordinate the work of ISIC, make efforts more productive and is an important reminder to stay true to ISIC's values. It also allows ISIC to be more accountable and transparent to the community of ISIC members and friends. It is recommended that it be reviewed every five years.

The strategic planning exercise helps articulate a shared vision of ISIC's values, priorities, and activities. However, if it ends there, ISIC will only realize a small fraction of the benefits that might accrue through full implementation of the strategic plan. The ISIC strategic plan must be implemented to help guide ISIC committees and their members to gain the full benefit. This means it must remain integrated into ISIC's administration's annual planning, decision-making, and reporting. Finally, this plan is intended to remain in ISIC members' and friends' minds (and hearts).

The followings are to clarify this ISIC Strategic Plan.

1. **What is the strategic plan?**

   ISIC's strategic plan is like a road map. It identifies the place we are trying to get to – ISIC's shared vision for a better future. It also guides the work of the Committees, members, and ISIC's administration (Secretariat) by giving them direction on how to get to the destination.

2. **Why is ISIC strategic plan essential?**

   This plan is an act of self-determination. It is a plan for the future that reflects ISIC members' and friends' needs and the vision of what ISIC can be. ISIC's strategic plan helps to remind us what we want to achieve. It helps us coordinate the work of many different people and make our efforts more focused and productive. It reminds us that we need to stay true to our values as a community as we work. This strategic plan helps us be more accountable and transparent to the ISIC community.

3. **How is the ISIC strategic plan developed?**

   ISIC Executive Committee develops the strategic mission, vision, values, and priorities. They need to be approved and adopted by the ISIC Executive Committee and Steering Committee. ISIC Executive Committee develops the first set of priorities. ISIC undertakes a process to involve the Technical Committees, all Sub-committees, and all members. All input is then considered for incorporation into the strategic plan.

4. **Can a strategic plan be changed?**

   The mission, vision, values, and priorities of the ISIC strategic plan are developed and approved by the ISIC Executive Committee and Steering Committee. No one can change these without approval from the ISIC Executive Committee and Steering Committee. They are intended to be

the road map for the community for the long term. This makes the strategic plan durable and focused on achieving a shared future vision.

The priorities are developed and approved by the ISIC Executive and Steering Committees every five years. This keeps the strategic plan flexible and responsive to changes globally (including impacts by the COVID-19 pandemic since 2020) and allows ISIC to build on its successes. ISIC Secretariat will develop annual goals, work plans, and budgets based on the priorities. The ISIC Executive and Steering Committees approve these goals and work plans.

5. **How will the Executive and Steering Committees use the ISIC Strategic Plan?**

The Executive and Steering Committees will use the ISIC strategic plan to make decisions and increase accountability. When tough decisions need to be made, leaders can turn to the strategic plan and ask, "Is this decision consistent with the priorities identified by the ISIC community?" They can also ask, "Is this decision consistent with the values identified by the ISIC community?" In this way, elected leaders respect the will of the majority of the members. Additionally, the Executive and Steering Committees can use the strategic plan to monitor ISIC's administration's performance. The Executive and Steering Committees can ask themselves, "Is the organization achieving what we have set out to achieve?" If not, why not?

Finally, the Executive Committee can use the strategic plan to be accountable to the ISIC members' community. The Executive Committee can present what they have achieved concerning the priorities set out in the strategic plan.

6. **How will ISIC Secretariat staff use the ISIC Strategic Plan?**

ISIC Secretariat staff use the strategic plan to develop their annual goals and budgets. Staff can ask themselves, "How can I use my resources to achieve the priorities and activities in the strategic plan?" They can also ask themselves, "If this activity is not helping to achieve the priorities set out in the strategic plan, then why am I doing it?"

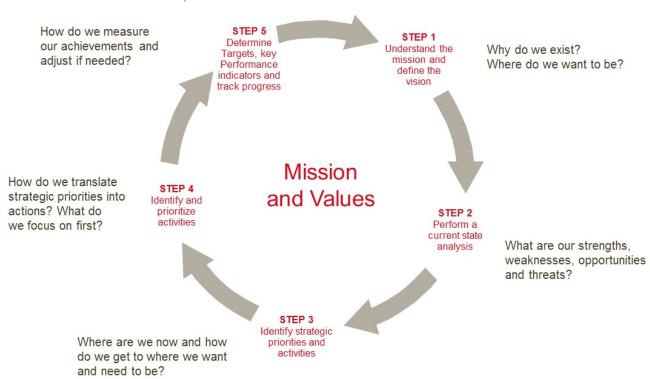7. **How will the ISIC member's community use the ISIC Strategic Plan?**

ISIC community members use the strategic plan to hold the Executive and Steering Committees accountable. Are ISIC Executive and Steering Committees achieving the priorities they set out for themselves? They also use it to recognize successes and accomplishments and celebrate progress towards a better future.

ISIC Strategic Plan

Strategic Planning Process

This strategic plan represents the five-year planning cycle for ISIC and builds upon the previous strategic plan. The critical elements of the strategic planning process are outlined in Figure 1 below.

Figure 1 – Strategic Planning Process

The following sections provide details about the ISIC strategic plan.

Strategic Plan

1. Vision, Mission, Scope, and Objectives

The strategic planning process reaffirms the community's mission and vision, the strategic priorities to accomplish the vision, and reconfirms values to maintain as ISIC works towards meeting the priorities.

Vision
The International Society for Intelligent Construction (ISIC) is a shared source of knowledge and information on intelligent construction technologies for public agencies, contractors, consultants, academia, and other relevant industries.

Mission
ISIC provides a forum for disseminating knowledge concerning the collection, analysis, and application of information relating to intelligent construction technologies (ICT) for infrastructure. ICT is a combination of modern science and innovative construction technologies. The mission of ISIC is to promote the applications of ICT to the life-cycle of infrastructure: from the survey, design, construction, operation, and maintenance/rehabilitation by adapting to a changing environment and minimizing risks. The goals of its mission are to improve the quality of construction, cost-saving, and safety.

Scope
The scope of ISIC covers all current and emerging intelligent construction technologies for the life-cycle of infrastructure. The Scope includes intelligent sensing, data collection/analysis, decision-making, and execution. The Scope covers civil engineering, construction machinery, electronic sensor technology, survey/testing technology, information technology/computing, and other emerging fields.

Objectives
The objectives of ISIC include the following:
- *Exchange ideas and information in an informal setting,*
- *Provide a forum for the practitioners of ICT from agencies, contractors, academics, vendors, and consultants,*
- *Provide a forum for discussion of research and development,*
- *Focus on the latest initiatives in the ISIC's areas of interest,*
- *Provide education and training in the areas of concentration,*
- *Provide technical assistance and reviews on regional and international standards and specifications,*
- *Provide an ICT journal to promote advancements in science and technologies of ICT that are free of commercial interests, and*
- *Create and maintain a network of personal and professional relationships.*

Summary of Accomplishments from Previous Plan Cycle

Since this is the first ISIC strategic plan, the accomplishments achieved since ISIC was founded in 2016 are presented under this section. Figure 1 presents a summary of ISIC's accomplishments from 2016 to 2019.

Figure 1 - Accomplishments of ISIC (2016-2019)

- The founding of the International Intelligent Construction Technologies Group (IICTG) in 2016
- Establishment of the www.IICTG.org website
- Development of the IICTG Bylaws in 2019.
- Signed the Memo of Understanding (MOA) with the US National Center of Pavement Preservation (NCPP) in 2016 to allow NCPP to provide the following administrative services.
- Arrangement for technical support for conferences, meetings, and training.
- Provided services to members of ISIC, including assistance with agendas, program assistance, website support, periodic publications, and other technical services as directed by ISIC Executive Committee
- Provided any financial, administrative tasks requested by ISIC Executive Committee.
- Inaugural announcement of the IICTG at the ICTG conference in Portugal in 2016
- The first IICTG International Conference was held in Minnesota, the USA, in 2017
- The second IICTG International Conference was held in Beijing, China, in 2019
- Rename of the IICTG to be ISIC during the IICTG 2019 conference
- Revision of the IICTG Bylaws to be ISIC Bylaws in 2019
- Signing the new MOA with the US NCPP for a 5-year term in 2019 to allow NCPP to provide the same services as in the previous MOA
- Founding of ISIC European Union (EU) Chapter in 2019
- Founding of ISIC North America (NA) Chapter in 2019
- Establish an ISIC coordination office in Harbin City, China, in 2019
- Establishment of the www.IS-IC.org website

Figure 2 - Accomplishments of ISIC (2020-2021)

- Development of ISIC Sub-committee scopes by the Executive Committee
- Plans for the 2022 ISIC International Conference by ISIC EU Chapter (NB: the conference was moved from 2021 to 2022 to lower the risks due to the impacts of the COVID-19 pandemic)
- Establishment for the Task Group staff of ISIC Secretariat
- Plan for workshops and webinars for one every couple of months starting in September 2020
- Plan for the book series of Intelligent Construction for Transport Infrastructure
- Established an online membership system

The following activities had <u>some</u> progress:

a. Plans for the 2022 ISIC International Conference by ISIC EU Chapter (NB: the conference was moved from 2021 to 2022 due to the impacts of the COVID-19 pandemic)
b. Plan for ISIC Journal and related publication
c. Reaching out to nations that have no ICT-related specifications and standards
d. Proposed ISIC Membership fees by ISIC NA Chapter (NB: as of May 31, 2020, the Executive Committee decided to table this proposal and will reconsider it in 2022)

Activities that had significant progress and were completed are not carried forward into the current strategic plan. Activities not completed in the last planning horizon have been incorporated into the current strategic plan.

2. <u>Current State Analysis</u>

A current state analysis reviews everything that impacts ISIC – either positively or negatively. It is an exercise to consider all assets and opportunities for ISIC. It also identifies gaps or vulnerabilities that could impede ISIC's success. A current state analysis is always limited – we can never know everything or predict the future. However, it is also a helpful tool to consider the operating environment affecting ISIC's efforts. It will be used as the basis for the risk assessment process described in more detail in a separate document.

What follows is a summary of feedback on ISIC's strengths, weaknesses, opportunities, and threats that the ISIC community would identify.

Strengths

ISIC is blessed with many strengths. These include a growing interest in ICT, increasing participants in ISIC conferences/social media (Wechat, LinkedIn), academic/industry partners, etc. It is essential to recognize and acknowledge these gifts and celebrate the strength of ISIC. These include:

- Relationships with the ISIC community (ISIC members, government officials, contractors, consultants, vendors, etc.)

- The establishment of the European Union and North American Chapters (the latter transformed the existing US ICT ETG operating since 2013) to be geared to local needs, especially between international conferences held in the different countries on a geographically rotating basis.
- We are expanding to include countries like Japan, Australia, Russia, etc.
- Stable and experienced leadership in the Executive Committee
- Strong support from NCPP on administrative and financial management
- A fund reserve for emergency uses (as of May 31, 2020, US$9,812)
- Community involvement and input from social media (such as LinkedIn, Wechat, etc.)
- A functioning website (www.IS-IC.org) to communicate with the world

Weakness

ISIC also has areas where improvement is needed. Some items can be addressed by Committees and staff personnel, while others require individual Members to be accountable. Weaknesses can be changed – they are not fixed qualities. Weaknesses identified include:

- Lack of periodic communication among committees and members
- Limited funding - Not yet having membership fees for providing stable funding
- Not yet having an official journal to establish ISIC as a formal international organization

Opportunity

At times there are changes in the operating environment that can benefit ISIC. It is essential to recognize these changes and take advantage of the opportunity. These include:

- Fast-growing ICT industry
- External recognition of ISIC's existence as a unique platform for ICT
- Increased strength of community self-reliance/health/financial means
- The community population is young, growing and can be instrumental in regional growth
- New beginnings since changing IICTG to ISIC in 2019 and lots of room to improve
- Changing the ISIC structure to increase accountability and reduce "disconnectedness" between Committees and Community
- Forming strategic partnerships with other academic universities/institutions and industry associations (NRRA, NAPA, EAPA, etc.)
- We are conducting webinars to improve visibility and membership drive.

Threats

Threats are those things that ISIC has no or little control over. That does not mean that ISIC is helpless. It means that ISIC has to take purposeful steps to mitigate the negative impact of those threats. These include:

- COVID-19 pandemic related impacts that force ISIC to conduct mostly online activities and to postpone the 2021 international conference to 2022
- Possibility of dilution of efforts with the establishment of Chapters (NB: there is no such evidence so far)
- Lack of time commitment due to ISIC is a volunteering organization

3. Strategic Priorities and Activities

Based upon the Mission, Vision, Values, Previous Plan Cycle Accomplishments, and the Current State Analysis, ISIC should determine and define between six to ten Strategic Priorities that will assist ISIC in getting where it wants and needs to be. Below are ISIC's Strategic Priorities and Activities.

Priority: 5-Year Plan and Milestones

This objective is important because it provides a stable, practical plan to the ISIC community and increases ISIC leadership and committees' accountability.

Activities to achieve this priority:

a. Develop a 5-year plan with achievable/practical milestones
b. Recruit committed workforce for ISIC Secretariat (ongoing efforts led by Prof. Guanghui Xu)
c. Involve all committee members to help to achieve the milestones

Priority: Strengthening Chapters

This objective is essential because Chapters can set boots on the ground to serve local communities.

Activities to achieve this priority:

a. Executive committee to assist Chapter to get up and running on their own
b. Selection of a robust and committed Chair for each Chapter
c. Conducting Chapter-sponsored meetings (e.g., cooperate with NRRA in NA) and membership drive to local communities
d. The NA Chapter has established a structure and conducted monthly meetings, while the EU Chapter will need some help.

Priority: Conducting Webinars

This objective is essential because the ISIC community can be connected via webinars, which are easier to do than face-to-face meetings, to increase participation and involvement in ISIC activities.

Activities to achieve this priority:

     a.   Start with hot topics such as BIM for pavements, Automation in Construction, etc. for one webinar every couple of months

     b.   Take advantage of the low-hanging fruits with Committee members' existing webinar contents (e.g., Intelligent compaction, recently completed research such as NCHRP 24-45 soils IC, ongoing studies such as NRRA Level 3-4 ICMV and FHWA IC for foundations, etc.), and the ICT book series (e.g., Introduction to ICT)

     c.   The ISIC webinars have been well prepared and presented since 2020. We will continue this effort to fill the gap between ISIC international conferences.

Priority: Planning and promoting the 2022 ISIC Conference

This objective is essential as ISIC international conferences are the main activities that draw the attention and interests of ISIC communities – although most ISIC members are often unable to travel overseas. Due to the impacts of COVID-19, the originally planned 2021 ISIC conference is postponed to September 6-9, 2022.

   Activities to achieve this priority:

     a.   Develop and ratify a strategy to plan and promote the 2022 ISIC conference

     b.   Advertise the conference at the TRB 2021 (virtual conference)/2022 and 4th International Conference on Transportation Geotechnics (ICTG 2021) (Chicago, US) conferences, including call-for-presentation

     c.   Create a one-page flyer to help publicize and promote the 2022 ISIC conference

     d.   Others

Priority: Enriching ISIC website contents

This priority is essential because the ISIC website's Member-Only technical contents can provide value to ISIC membership.

   Activities to achieve this priority:

     a.   Develop technical content under each technical category of ISIC subcommittees

     b.   Post webinar content (including videos of recorded webinars) on hot topics (e.g., Intelligent Compaction, BIM, AI, Automation)

Priority: Plan for ISIC Journal.

This priority is essential because ISIC Journal can be a rich resource to advance ICT. However, cautions should be made to maintain the practical nature of ISIC instead of becoming an academic. Further discussion is needed among ISIC committees and Chapters.

   Activities to achieve this priority:

     a.   Start with ISIC Bulletins, e.g., 2-4 times a year.

      b. Apply for the new ISIC journal with publishers such as Elsevier (Prof. Antonio Correia started a conversation with Elsevier in January 2020. Dr. George Chang provided a document to summarize the vision and scope of the proposed journal. However, the process is stalled due to the impacts of the COVID-19 pandemic).

      c. Recruit world-class reviewers and editors

Priority: Others….
      TBA

4. <u>Prioritization of Activities</u>

Determining which activities to focus on first is one of the most significant challenges of implementing a strategic plan. A process to prioritize the activities needs to be undertaken in order to focus on ISIC's resources in implementing its strategic plan. The key benefits and costs of each activity should be outlined as much as possible. For this first generation of ISIC Strategic Plan, we will simply list "annual goals" at the end of this document for now.

5. <u>Determination of Key Performance Indicators and Targets</u>

Based on the strategic priority, each activity should have specific key performance indicators that are <u>SMART</u> - <u>S</u>pecific, <u>M</u>easurable, <u>A</u>ttainable, <u>R</u>ealistic, and <u>T</u>imely, making the vision more concrete by defining how success is measured. Performance indicators are used to monitor progress towards strategic priorities, closing the gap between the current state and the future state, as defined by the vision. They will help track the realization of strategic priorities, measuring the progress towards realizing the vision. Performance indicators should focus on desired outcomes for strategic priorities. Outcomes focus on what difference is being made.

When determining key performance indicators, the following principles should be kept in mind:

- Link to ISIC's strategic priorities;
- Limit to the select few that measure success;
- Guide desired decisions and behaviors;
- Can be easily understood and measured; and
- Are relevant to all of ISIC's departments.

Once ISIC has defined its key performance indicators, targets can be set, which are the value of a key performance indicator at a specific moment in time. Targets can be set yearly or by the end of the 5-year plan and tend to focus on outputs or what is being done.

To keep track of the progress towards achieving the strategic plan and ISIC's vision, a process must be put in place, and a strategic scorecard must be developed. <u>An owner should be identified for this process, and the frequency of reporting should be specified and should aim to be at least annually, if not quarterly.</u>

It is possible that certain activities may need to be revisited due to changes in the internal and external environment and reprioritized depending on the results attained each year.

Changes between Previous 5 Year Plan and Current 5 Year Plan

Once the current 5-year strategic plan has been outlined, it is useful to highlight any significant changes between the previous and current 5-year plans (in this case, ISIC activities between 2016 and 2019).

Mission and Vision Statement:

There are no changes: the mission and vision statement remain robust and has not changed since developed and continues to resonate. They are viewed as a right, long-term (20+ years) mission, and vision statement.

Scopes:

ISIC's scopes articulated in the previous Strategic Plan remain fundamental to ISIC.

Strategic Priorities:

The strategic priorities identified in the previous 5-year strategic plan remain essential to the community today. The only modification is to emphasize the "self-determination" of ISIC in the strategic priority that deals with governance of ISIC.

5 Year Activities:

The previous strategic plan contained activities described in Figure 1. The activities within the current strategic plan are a mix of new ideas, modifications to preexisting activities, and some that did not have enough progress in the last strategic plan term. The increase in activities is reflective of greater participation and input in establishing the activities and more specific and measurable targets.

Implementation Suggestions

The strategic planning exercise is beneficial for articulating a shared vision of ISIC's values, priorities, and activities. If it ends there, however, ISIC will only realize a small fraction of the benefits that might accrue through full implementation of the strategic plan. To gain the full benefit of the strategic plan, it must be implemented in a way that helps to guide all actions of all committee members. For example, it must remain integrated with annual planning, decision-making, and ISIC's Secretariat reporting. Finally, it must also remain in the minds (and hearts) of the people.

Ways to do this include:

       a. The Executive Committee carries the strategic plan at all times;
       b. Committee review the strategic plan as part of orientation activities after each planning cycle;
       c. Executive Committee members carry the strategic plan with them at all times;
       d. Committee review the strategic plan at least once annually;
       e. The strategic plan is used to set annual goals and allocate financial resources (budgeting);
       f. Use as the basis for staff reports to the Executive Committee;
       g. Use as the basis for the Executive Committee reports to the ISIC community;
       h. Align the strategic priorities; and
       i. Post the most current strategic plan prominently on ISIC's website.

Appendix A - Annual Goal Setting & Budget Planning

Years	Annual goals	Activities required to achieve the goal	Lead staff responsible for the activities	Financial resources required
2020	Forming Subcommittees	Stalled due to the pandemic	Prof. Soheil Nazarian	NA
	EU Chapter Establishment	Email communication among key members	Prof. Antonio G. Correia	NA
	NA Chapter Establishment	Ad-hoc officers' web meeting	Tim Kowalski	NA
	ISIC Online Membership	Postponed for further review in 2021 due to the pandemic	Dr. George Chang	NA
	ISIC Education/Training Plan: a webinar every couple of months	Conducted two webinars in July and October	Prof. Carlos Ferregut, Prof. DH Yu, and Prof. ZR Yue	NA
	ICT book series	Published the first volume "Introduction to ICT" in Chinese in November	Prof. G. Xu	NA
		Connecting the publisher of the Chinese ICT Book Series with Elsevier to publish the English versions	Prof. Antonio G. Correia	NA
2021	ICT book series	Prepare the first volume "Introduction to ICT" in English (the process takes longer to accomplish due to the translation/re-write efforts)	Prof. Antonio G. Correia And Dr. George Chang (recruited more editors to complete the translation)	TBA

Years	Annual goals	Activities required to achieve the goal	Lead staff responsible for the activities	Financial resources required
	Planning for the 2022 ISIC International Conference in PT	Planning, promotion,: Marketing materials and website contents	Prof. Antonio G. Correia	TBA
	~~US ICT Data QA Expert Task Group (ETG)~~	~~Provide technical assistance to the NRRA to form an ICT ETG (this task is removed due to potential conflict of interest)~~	~~Tim Kowalski~~	~~TBA~~
	NA Chapter Mini-Conference	Conduct a mini-conference similar to the past IC ETG meeting (this mini-conference is merged with the MN Transportation Conference & Expo in 2022)	Tim Kowalski	TBA
2022	ISIC and US FHWA Meeting at TRB 2022 (for a strategic alliance with FHWA)	Planning, promotion, and execution	Dr. George Chang	No cost. Volunteer work.
	ISIC Track at the MN Transportation Conference & Expo (Feb. 28 - Mar. 2) (for a strategic alliance with NRRA)	Planning, promotion, and execution	Tim Kowalski and Dr. George Chang	The cost is covered by the conference.
	Conducting 2022 ISIC International Conference (Sept. 6-9) in PT	Planning, promotion, and execution	Prof. Antonio G. Correia	The cost is covered by the conference.
	Continue ISIC Webinars	Planning, promotion, and execution	Leaders for specific webinars	No cost. Volunteer work.
	Complete the Introduction to ICT book in June	Submit the completed manuscript to Elsevier	Prof. Antonio G. Correia and Dr. George Chang	No cost. Volunteer work.

Years	Annual goals	Activities required to achieve the goal	Lead staff responsible for the activities	Financial resources required
	EU Chapter Growth	TBA	Prof. Antonio G. Correia	TBA
	NA Chapter Growth	TBA	Tim Kowalski	TBA
2023	Start planning for the 2024 ISIC International Conference in US	Planning, promotion	Dr. George K. Chang and Tim Kowalski	Budget by NCPP
2024	Planning for 2024 ISIC International Conference in US	Planning, promotion, and execution	Dr. George K. Chang and Tim Kowalski	TBA
	Review ISIC Committee Membership (all membership are due in 2024)	Meeting and discussion	Executive Committee	TBA
	ISIC Journal Plan	Planning, promotion, and execution	Prof. Guanghui Xu and Prof. Antonio G. Correia	TBA