



IFMA's World Workplace®
Your Facility Conference & Expo

Oct. 16-18, 2019
Phoenix, Arizona

Phoenix Convention Center

GLOBAL COST PREDICTION
in a Post-ICMS world

Session 2.01, N122 A/B, 3:00pm, October 17



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Presenter Introduction



Stephen Ballesty, FRICS, FAIQS, IFMA Fellow, ICECA, CQS, CFM

-  Stephen's Sydney based consulting firm In-Touch Advisory connects stakeholders with solutions for the Built Environment across the property–construction–facilities life cycle.
-  Stephen is currently an Australian delegate for the ISO international FM standards initiative (ISO 41000 since 2012), ISO/TC-267's global liaison to ISO/TC-251 (ISO 55000 asset management). He is also the Oceania representative to the RICS's Global Cost Prediction working group.
-  Stephen is a former member of the IFMA Board of Directors and Past Chairman of both the IFMA Foundation; and FMA Australia.



 Stephen.Ballesty@in-touchadvisory.com




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GLOBAL COST PREDICTION in a Post-ICMS world

- 1: International Construction Measurement Standard (ICMS) update, 1st & 2nd editions
- 2: RICS Global Professional Statement in Cost Prediction, reporting and benchmarking
- 3: Examine best practice and the role of Cost Management Professionals and more sustainable FM outcomes
- 4: Demonstrate international leadership and applications - useful resources and links



SESSION GOAL: Understanding of the ICMS, and the thought leadership represented in the Global Professional Statement in Cost Prediction and its impact on FM.

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Important Definitions

Type of Document	Definition
 International Standards	High-level standard developed in collaboration with other relevant bodies. (RICS, 2019)
	<i>Such standards while voluntary and represent recommended practice can become binding via national regulation and/or contractual arrangements. (Ballesty, 2019)</i>
RICS Rules of Conduct for Members & RICS Rules of Conduct for Firms	These Rules set out the standards of professional conduct and practice expected of members and firms registered for regulation by RICS.
 RICS Professional Statement (PS)	Mandatory requirements for RICS members and regulated firms.
RICS Guidance Note (GN)	A document that provides users with recommendations for professional advice and areas of good practice.
RICS Code of Practice (CoP)	A document developed in collaboration with other professional bodies and stakeholders that will have the status of a professional statement or guidance note.

ISO
ICMS

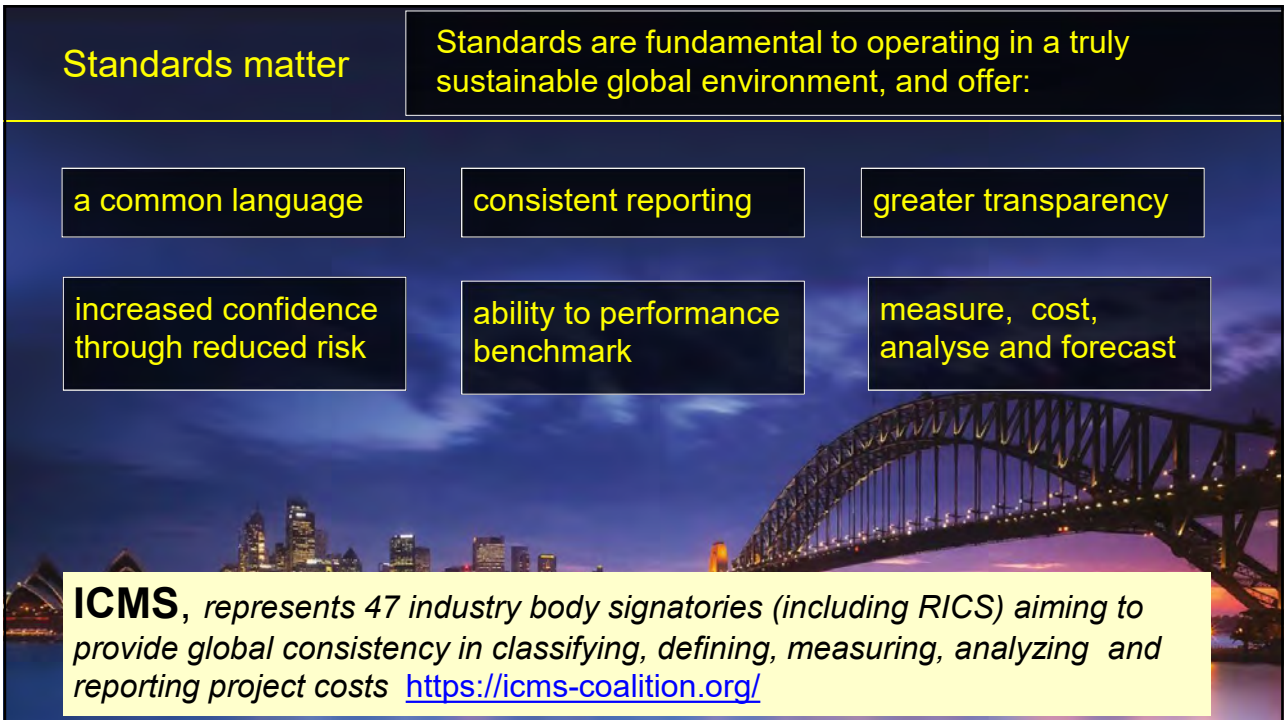
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Standards matter

There is a need for professional, global standards in land, real estate, infrastructure, construction and facilities.

Pursuit of global market transparency, comparability and performance benchmarking.



Standards matter

Standards are fundamental to operating in a truly sustainable global environment, and offer:

- a common language
- consistent reporting
- greater transparency
- increased confidence through reduced risk
- ability to performance benchmark
- measure, cost, analyse and forecast

ICMS, represents 47 industry body signatories (including RICS) aiming to provide global consistency in classifying, defining, measuring, analyzing and reporting project costs <https://icms-coalition.org/>

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You can't manage what you don't measure

- ❑ **Metric:** "A standard of measurement"
- ❑ **Measurement:** noun, "the extent, or amount obtained by measuring"
- ❑ **Benchmark:** "A standard by which others may be measured"

So we collect data (measurements), determine how those will be expressed as a standard (metric), and compare the measurement to the benchmark to evaluate progress...



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WHAT IS QUANTITY SURVEYING

"It deals with estimating and managing the costs of a construction project"



-  It takes into account each material, resource and equipment needed in every property development project
-  Quantity surveyors work out the estimated cost at the start of the project, and continue to keep watch on the costs as the project progresses

Quantity x Rate = Outcome (\$)



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An Industry Challenge ... inconsistency

HOW DO YOU PRICE A CONSTRUCTION PROJECT?

It's done differently all over the world

For example...

- Do you include the cost of the land itself?
- Do you include design costs?
- Do you include the cost of furniture and equipment?
- Do you include taxes?

There are thousands of inconsistencies worldwide

- As a result **10** identical projects...
- built in **10** different countries...
- will have **10** different price tags...

*And that's before you even factor in LOCAL WAGES, MATERIALS COSTS and VARIATIONS IN CURRENCY

This could lead to cost variations of **millions of dollars**

INCONSISTENT COST REPORTING PRACTICES...

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An International Solution ... standardisation

SO WHAT'S THE SOLUTION?

INTERNATIONAL CONSTRUCTION MEASUREMENT STANDARDS:
the product of collaboration between more than **40** global standards bodies

its implementation by these organisations will:

- ...provide a **SINGLE, INTERNATIONAL** methodology for cost reporting
- ...**BOOST** the collaborative potential of technologies like BIM and big data
- ...make it easier to put **A RELIABLE PRICE TAG** on projects across the world

...and help to unlock **\$1,000,000,000,000s** in international investment

IT WILL TRANSFORM:

- Global **COST** comparisons
- Feasibility studies and development appraisals
- COST PLANNING** and **CONTROL**
- PROCUREMENT** and the **ANALYSIS** of **TENDERS**
- AUDIT** and **DISPUTE** resolution
- ...and the valuation of assets and liabilities

Find out more and see the new standard at icms-coalition.org


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International Construction Measurement Standard (ICMS)



- ❑ Our industry is global; our standards are not
- ❑ Major project delivery is increasingly multi-national and multi-disciplinary
- ❑ Combining buildings and civil engineering
- ❑ Standards for benchmarking, measuring and reporting construction project cost
- ❑ July 2017

FREE: <https://icms-coalition.org/>




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International Construction Measurement Standard (ICMS)



- ❑ A guide on the ICMS background
- ❑ Explanation of the structure
- ❑ Content and potential use for ICMS, together with various
- ❑ with appendices, for further and more detailed guidance and worked examples

FREE: <http://rics.org/icmsexplained>



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International Construction Measurement Standard (ICMS)

A simple cost classification hierarchy

- High-level cost classification
- Buildings and civil engineering
- Definitions, inclusions and exclusions
- Four level taxonomy
 1. Projects or Sub-Projects
 2. Cost Categories
 3. Cost Groups
 4. Cost Sub-Groups
- Key cost drivers

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International Construction Measurement Standard (ICMS)

So simple, but that was 2017...!!

- High-level cost classification
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- Definitions, inclusions and exclusions
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Estimating & Cost Planning

ACCUACY

4x

2x

0.5x

0.25x

Feasibility → Concept → Design → Specification → Tender/Bid

TIME

Cone of Uncertainty

- Expectations
- Definitions
- Structure
- Measurement
- Compliance
- Forecasts
- Market
- Contract
- Risks
- Life cycle
- Commissioning
- Operations / FM

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ICMS, 2nd edition (incorporating life cycle costs) **

The Iceberg Principle

Calculating Life Cycle Costs

15%

85%

NOTE: Diagrammatic only, proportions vary by sector, project and source.

- <https://icms-coalition.org/consultation/>
- "The first edition of ICMS focused on creating a standard for capital cost reporting. The second edition builds upon this by creating a cost classification for renewal, operation and maintenance – all components which have a direct impact on **facility management**."
- The second edition of ICMS will better connect **facility management** and early investment and construction cost decisions".
- ICMS2 consultation closed on July 3, 2019.

** at the time of preparation of this presentation the expected publication of ICMS2 was October 2019

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ICMS 2nd edition** (ICMS2)

"Life Cycle Costing, where the QS and the FM'er meet"
Ballesty, World Workplace Asia 2010

** at the time of preparation of this presentation the expected publication of ICMS2 was October 2019

ICMS 1st edition (2017) Construction only

ICMS 2nd edition (2019) Construction & Life Cycle

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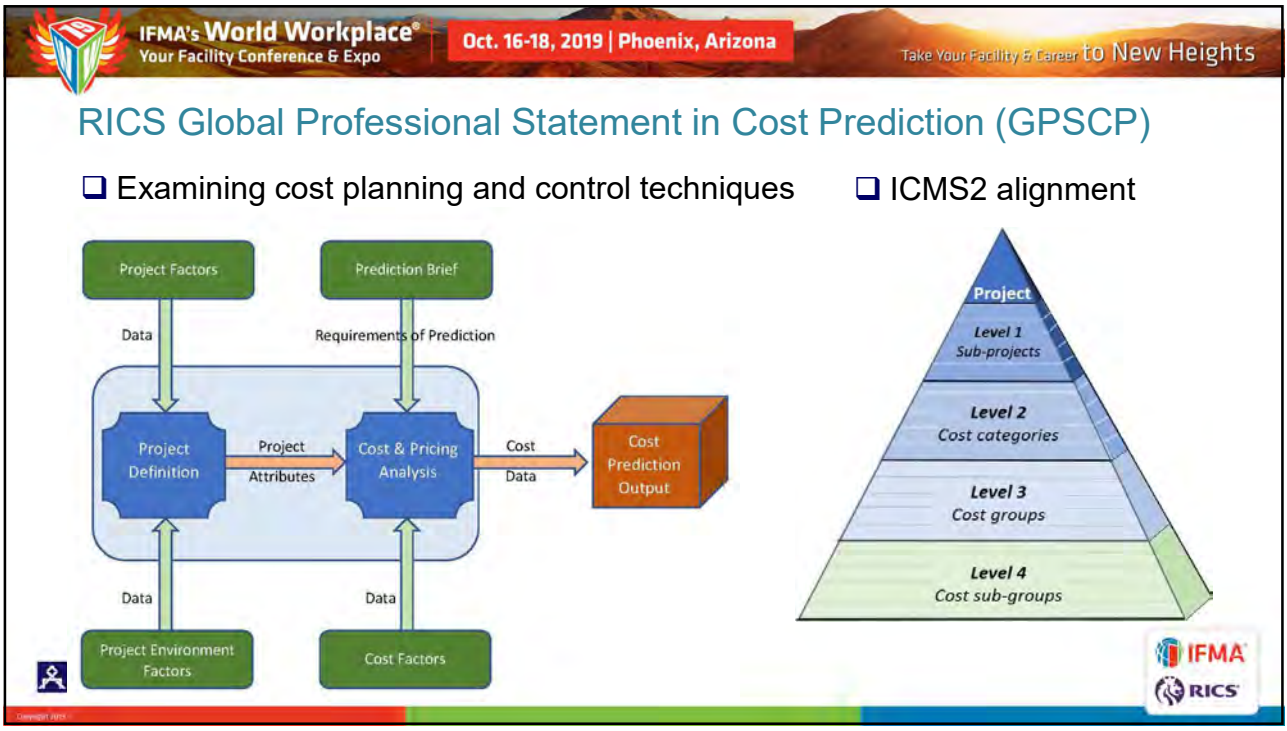
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RICS Global Professional Statement in Cost Prediction (GPSCP)

- 22 experts from 12 countries
- East & West calls over two (2) years
- Three (3) workshops in London
- Additional research and consultation
- ICMS, then ICMS2 alignment
- Report due November, 2019

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RICS Global Professional Statement in Cost Prediction (GPSCP)

- Inputs can be data, information, productivity, construction materials, construction methodology or time.
- Design is an input, not the input.

KEY
 A gateway to the next step—when all inputs are certain/mature enough
 Inputs e.g. business case, concept/design, scope, time etc.
 A move to the next step/ level may not have all the required inputs

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RICS Global Professional Statement in Cost Prediction (GPSCP)

- Cone of uncertainty

Criteria	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Cost prediction levels	Business case estimate	Conceptual estimate	Developed estimate	Mature estimate	Construction estimate	Life cycle estimate
Information completeness	10%	10-30%	30-50%	50-70%	70-90%	90-100%
Cost prediction accuracy	-30% to +50%	-20% to +30%	-15% to +20%	-10% to +15%	-5% to +10%	>10%
Methods	Historical information, judgement	Parametric ratios	Semi-detailed unit costs	Detail (quantity based)	Detail (quantity based and full specs)	Economic evaluation

- Cost levels in relation to design completeness

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Recognition of data maturity

INPUTS	PROCESS	OUTPUTS
<ul style="list-style-type: none"> Functional output (end product) Business case / funding basis Remit/scope of cost prediction Time--duration / schedule Basis for quantification (concept / design) Specification/quality Assumptions and exclusions (associated with each input) Site-related factors Procurement strategy / contract type Programme 	<ul style="list-style-type: none"> Quantification – design, duration Quantification – locality Quantification – facilitation Rates - design, duration Rates – locality Rates – facilitation Productivity (factor on rates) Life cycle costing Assumptions and exclusions (associated with each output) Review / Validation via Market testing Experience / Judgement Risk identification / analysis 	<ul style="list-style-type: none"> Level 1 Business case estimate Level 2 Conceptual estimate Level 3 Developed estimate Level 4 Mature estimate Level 5 Construction estimate Level 6 Life cycle estimate

Inputs, process and outputs in the cost prediction system

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Values, attributes and quantities

Out-turn cost / final account targets

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RICS Global Professional Statement in Cost Prediction (GPSCP)

❑ Risk identification, analysis and evaluation

What is the consequence of the risk occurring? What is the area of uncertainty? What background condition is driving risk?

CAUSE
RISK
EFFECT

❑ ISO 31000:2018 defines risk as the “effect of uncertainty on objectives”

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RICS Global Professional Statement in Cost Prediction (GPSCP)

❑ Minimizing bias

❑ Intuition v's Rational reasoning

- **Optimism bias** - a tendency to underestimate the cost and overestimate the benefits or favourable outcomes.
- **Anchoring bias** - a tendency to rely too heavily, or "anchor", on one piece of information when making decisions.
- **Confirmatory bias** - a tendency to focus on, remember or search for information in a way that confirms preconceptions.

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Intuition v's Rational

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RICS Global Professional Statement in Cost Prediction (GPSCP)

□ Data structure, metrics and acquisition

□ Data curation steps:

1. Selection
2. Logic
3. Integrity
4. Context

□ Data sources include:

- National and supra-national agencies
- Professional organisations
- Consultants
- Clients

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RICS Global Professional Statement in Cost Prediction (GPSCP)

□ Data structure, metrics and acquisition

Barrier	Reason
Human factors	<ul style="list-style-type: none"> ▪ Lack of trust (e.g. previous interactions and history of partnerships) ▪ Fear of misinterpretation/misuse of data ▪ Confidentiality and privacy concerns ▪ Limited resources, availability of skilled staff
Usability	<ul style="list-style-type: none"> ▪ Records not kept electronically ▪ Data in an incompatible format ▪ Only aggregated or incomplete data is available ▪ Frequency of data release, timeliness
Availability	<ul style="list-style-type: none"> ▪ Uncertainty about where data exist ▪ Uncertainty about how to access data ▪ Onerous approval process for accessing data ▪ Policies, including local and national laws that limit access

□ Data curation steps:

1. Selection
2. Logic
3. Integrity
4. Context

□ Data sources include:

- National and supra-national agencies
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some of the barriers to data acquisition

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Cost data samples

BCIS Online

BCIS Online is a 12 month online subscription tool. Prepare cost plans, provide early cost advice to clients and benchmark costs for both commercial and residential buildings

REQUEST A DEMO >

Facilities Construction Costs with RSMMeans data

2019

14th Annual Edition

Australian Construction Handbook

2019

COMPARATIVE COST INDEX

Rider Levett Bucknall

City	April 2018	July 2018	October 2018	January 2019	April 2019	Annual % Change
Boston	21,563	21,789	22,086	22,267	22,480	4.25%
Chicago	21,394	22,055	22,416	22,789	23,269	8.77%
Denver	14,649	14,819	14,937	15,096	15,253	4.12%
Honolulu	23,804	24,048	24,520	24,812	25,192	5.83%
Las Vegas	14,081	14,299	14,503	14,674	14,834	5.35%
Los Angeles	21,010	21,266	21,567	21,792	21,526	-2.46%
New York	25,387	25,628	26,000	26,244	26,524	4.48%
Phoenix	14,442	14,795	15,013	15,203	15,376	6.47%
Portland	15,768	16,023	16,315	16,630	16,843	6.82%
San Francisco	25,704	26,038	26,294	26,844	27,516	7.05%
Seattle	17,250	17,525	17,810	18,120	18,402	6.68%
Washington, DC	20,437	20,660	20,987	21,528	21,617	5.77%

Construction Cost: Red and Mar. Crawl: Index percentage impact between April 2018 and April 2019

Source: Rider Levett Bucknall, North America – 2nd Quarter 2019

It will help you

- Determine what a building should cost.
- Benchmark: It gives a view of the market and bid comparisons to help ensure that sum costs are in the right ball park.
- Predict the profitability of your project more confidently.
- Expand your horizon. If your firm focuses on a particular sector, BCIS can provide you with a wider view of the market.
- Provide assurance and gives your quotes/tenders credibility. BCIS is reliable, our data is not subject to commercial bias. It is the only available source of independent data in the UK.

What's included

- Over 20,000 cost analyses
- Twelve sets of Indices
- Average £/m² building prices
- Construction Duration Calculator
- Wage agreements
- Dayworks rates
- Schedule of Basic Plant Charges
- Contract percentages
- Tender Price Studies

RICS' BCIS <https://www.youtube.com/watch?v=jHk5LY13jKM>

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Global Cost Prediction

...provide a

SINGLE,

INTERNATIONAL methodology for cost reporting

ICMS

WILL

...make it easier to put

A RELIABLE

PRICE TAG

on projects across the world

...BOOST

the potential of BIM and big data

...and help to unlock **\$1,000,000,000,000s** in international investment.

For FM'ers with responsibility for budgets and cost control ... definitely worth a look.

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Useful References

ICMS INTERNATIONAL CONSTRUCTION MEASUREMENT STANDARDS

- <https://icms-coalition.org/>

ISO

- <https://committee.iso.org/home/tc267>

ARCADIS Design & Consultancy for natural and built assets

- <https://www.arcadis.com/en/>

Turner & Townsend

- <http://www.turnerandtownsend.com/>

RLB Rider Levett Bucknall

- <https://www.rlb.com/en/>

In-Touch Advisory

- <http://www.in-touchadvisory.com/>

<https://www.ifma.org/> & <https://www.rics.org>


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Global Cost Prediction



- ICMS**, 1st & 2nd editions (2017 & 2019?)
- ISO 41000** series since 2017, and now ICMS recognition of FM.
- Cost classification for Construction, and now **Life Cycle**, leading to Costs being consistently and transparently benchmarked.
- RICS Global Professional Statement in Cost Prediction (GPSCP)** as a basis for identifying, analyze the causes of cost differences between projects.
- GPSCP objective: *"improved data and informed decision making on the design, construction and operation of facilities worldwide"*.

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Reflections ... any questions?


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Presenting at World Workplace



Stephen Ballesty, FRICS, FAIQS, IFMA Fellow, ICECA, CQS, CFM

SESSION CODE	SESSION TITLE	DATE	TIME
2.02	Global Cost Prediction in a Post-ICMS world	October 17, 2019	3:00 PM - 4:00 PM
5.04	Workplace Quality Assessment	October 18, 2019	9:15 AM - 10:15 AM
6.11	ISO 41000: Next-gen FM via International Standards	October 18, 2019	10:30 AM - 11:30 AM



 Stephen.Ballesty@in-touchadvisory.com

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