



GrowingEnterprises^{SG}



Your Trusted Partner in Accreditation



Best Practices for Conducting Remote Assessments/Audits

Terence Hu & Chea Weiqiang

16 September 2020



Outline

1. Introduction
2. Best Practices for Conducting Remote Assessments/Audits
 - International Community
 - Singapore
 - Singapore Accreditation Council – Learning Points
3. Preparations in supporting remote assessments/ audits
4. Support Available to Help Companies Adopt Relevant Technology and Solution

Introduction

1.1 About Enterprise Singapore and Quality & Excellence Group

QEG - Building Trust in Singapore Products and Services



We grow stronger Singapore enterprises



MISSION

Grow stronger Singapore enterprises by building capabilities and accessing global opportunities, thereby creating good jobs for Singaporeans.



4 PILLARS OF ENTERPRISE SINGAPORE



Building resilient, competitive industries and enterprises



Tapping global opportunities for Singapore



Developing Singapore as a top global trading and startup hub



Building trust in Singapore products and services

1.2 About Enterprise Singapore and Quality & Excellence Group

Building on our Quality & Excellence infrastructure to enable industry transformation and internationalization



STANDARDS DEVELOPMENT



Develop and review Singapore standards to facilitate interoperability, conformance and market access

TESTING, INSPECTION & CERTIFICATION (TIC)



Competent, accredited TIC players provide supporting services

ACCREDITATION



Accreditation programmes to ensure TIC quality

CONSUMER PRODUCT SAFETY, WEIGHTS AND MEASURES



Ensures accurate weights and measures transactions, and safety of household consumer goods sold

Assess conformance of enterprises to standards

Ensure competence and impartiality of TICs

for industry & enterprises, as well as public health and safety



Quality Products & Services



Excellent Organisations



Market Penetration



Health, Safety & Environment

1.3 About TIC Interest Group



Mission

To serve and advance the interests of the TIC Industry in Singapore

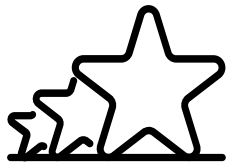
Roles of TIC Interest Group



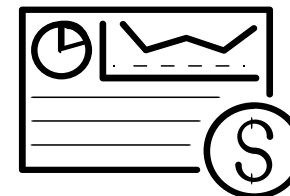
Champion the interests of the members via regular engagements with industry and policymakers



Develop and provide recommendations to industry/policymakers TIC services that can support national or industry initiative

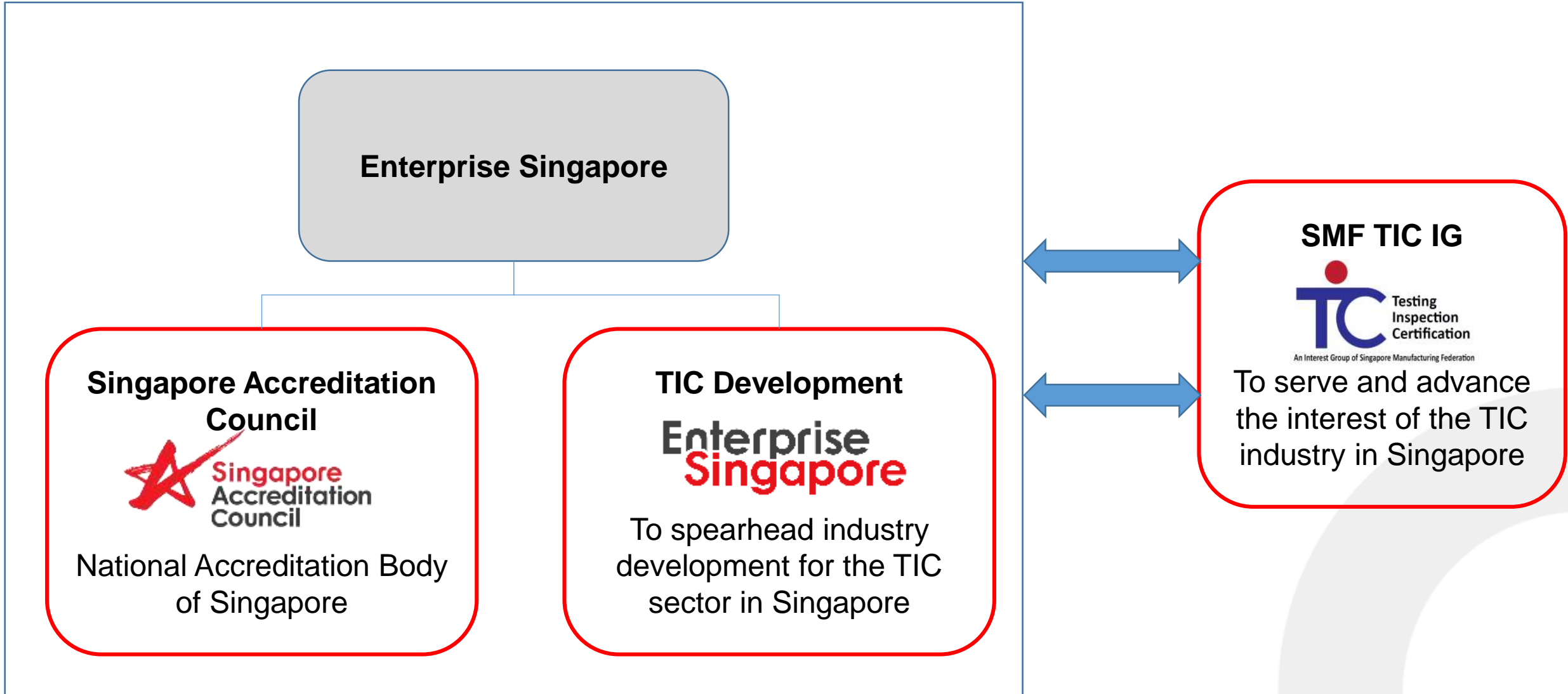


Raise the profile and public awareness of TIC sector



Upgrade the capabilities of TIC sector

1.4 Building a Robust TIC Industry



Best Practices for Conducting Remote Assessments/Audits

2.1 Overview

Motivations for adopting remote assessments



COVID-19
CORONAVIRUS

Pandemic



Travel Restrictions



**Technology
Advancement**

2.2 Remote Assessment Best Practices – International

Existing areas of remote conformity assessments



Credit: Bureau Veritas
Source: Safetyatsea.net



Credit: Lamprell
Source: offshore-energy.biz



Credit: RINA
Source: offshore-energy.biz



Credit: Boston Dynamics
Source: technologyreview.com

Remote Inspections of Vessels

- Drone based remote inspections
- Thickness measurements
- in cargo hold spaces using ultrasonic techniques

Remote Survey and Certification

- Remote survey of steel for rigs to be built
- Certified steel at steel mill with data provided to facilitate on-time fabrication of the rigs

Classification Surveys – Live Streaming

- Live-streaming survey of ship's hull and machinery
- Detailed inspections which can't be achieved with the human eye - onshore

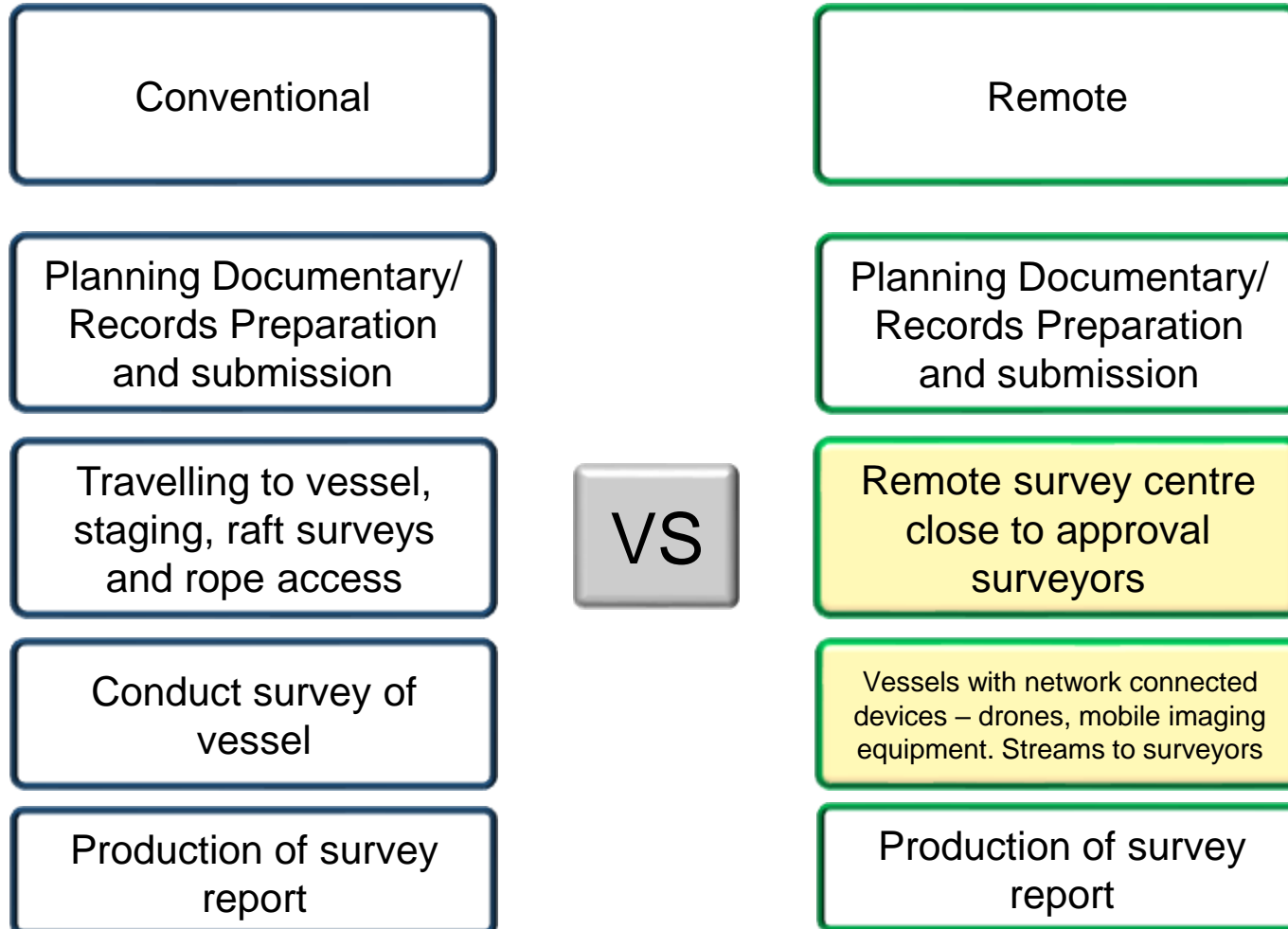
Spot – Rig Patrol

- Inspection of gas leaks and data collection on offshore rigs
- Perform work in high-risks environments

2.2 Remote Assessment Best Practices – International

Existing areas of remote conformity assessments

Remote Inspections of Vessels – How?



Credit: Bureau Veritas
Source: marine-offshore.bureauveritas.com

- Potential Benefits:**
- Reduces time and costs – travelling, waiting, costs to ship managers
 - Enhances productivity and business efficiencies
 - Reduces risks to health, safety and environment

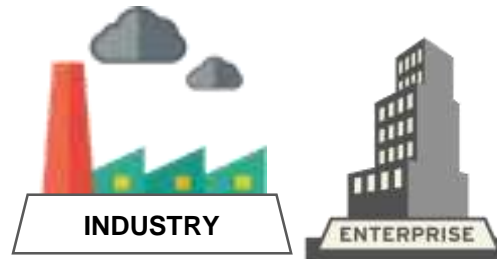
2.3 Remote Assessment Best Practices – International Opportunities for remote conformance activities

Enterprise
Singapore



Regulators

- Progressively accepting alternative means of ascertaining/demonstrating conformance
- Provisional, accommodative policies to balance businesses' needs and regulatory requirements



End-users

- Mindset change, openness for pilot trials, proof of concept to enable work-around solutions to ascertain conformity
- Prolonged pandemic situation drove the need to explore alternative means of enabling product/ service to market



Accreditation Community

- Supporting remote assessment processes
 - ✓ ID3:2011 – IAF Informative Document for Management of Extraordinary Events
 - ✓ ID12: 2015 – Principles on remote assessment
 - ✓ IAF MD 4 – Mandatory Document for the user of information and communication technology (ICT) for Auditing/ Assessment Purposes
- Recognize the need to move forward with alternate solutions to mitigate the impact brought about by Covid-19 to accreditation frameworks and operational processes

2.4 Remote Assessment Best Practices – Singapore

Leverage technology to meet conformance and compliance needs efficiently



Credit: H3 Dynamics
Source: CNA and others

Industrial Building Facade Inspection

- Drone-based inspection of building facade
- AI-backed recognition system to identify flaws in inspected areas



Credit: Airobotics
Source: insideunmannedsystems.com

Police Enforcement

- Co-development between The Home Team Science & Technology Agency (HTX) and Airobotics
- Initial project - enhancement of first responder capabilities. Tweaked to support pandemic ops.
- Unmanned, self-monitoring and real-time tracking of anomalies



Credits: CNA
Source: ecowatch.com

Spot – Safe Distancing

- Deployment of Boston Dynamics' spot – remind parkgoers to maintain safe distance.
- Remotely controlled by Nparks

2.4 Remote Assessment Best Practices – Singapore

Leverage technology to meet conformance and compliance needs



Remote Façade Inspection – How?

Conventional

Planning Documentary/
Records Preparation
and submission

Gondola Access, Shift
locations, conduct
inspections

Data Analysis &
Production of report

VS

Remote

Planning Documentary/
Records Preparation
and submission

Drone setup, flight path
mapping, image capture

Data Analysis &
Production of report



Credit: H3 Dynamics
Source: CNA and others



- Potential Benefits:**
- Significantly reduces time and costs – equipment setup and adjustments
 - Enhances data accuracy through AI with layer of human verification
 - Reduces risks to health, safety and environment

2.5 Remote Assessment Best Practices – SAC

Learning Points



Time Management

- Detailed assessment plans to smoothen process
- Pre-assessment documents, records reviews
- Familiarization of tools to enable process
- Trials and Infrastructure management



Communications

- Communicating clearly and specifically
- Misinterpretation causes delays – providing correct information or documents



Modalities

- Part remote document review, follow up with on-site witnessing
- Not applicable for complex scopes or initials

2.6 Remote Assessment Best Practices – Summary



**Acceptance and
Recognition**



**Time & Costs
Savings**



**Health, Safety
and
Environment**

Preparations in supporting remote assessments/ audits

3.1 Preparations in supporting remote assessments/ audits



Administrative/ Logistical

- **Coordination and presence of resources** – quality representatives/ management and signatories
- **Infrastructure setup and pre-assessment trials** – Internet, Mobile hi-resolution imaging devices, mounting and stabilisation equipment

Documentation/ Records

- **Confirmation of scope/** schedule at least 2 to 3 weeks before assessment day
- Advance preparations of records/ documents - **last 12 months – would be requested at least 2 weeks in advance** – cloud, drop-box or email
- **Convert** documents from MS words to PDF – files and size optimisation, word searchable. **Compress** (zip, rar, 7zip) and send in parts



3.1 Preparations in supporting remote assessments/ audits



Other considerations

- ✓ Additional **resources** to **man live streaming of tests demonstrations**
- ✓ Sensitive, confidential documents provided for review/ sighting
 - Determine level of access restrictions and/ or infrastructure security
 - Non-disclosure agreements/ Pre-assessment declarations
- ✓ **Familiarisation** with video conferencing platforms to reduce disruptions/ delays

Emerging Areas



Smart Inspections



Biomedical and Healthcare



Environmental Sustainability



Food and Agriculture



Digitalisation and Cybersecurity

Key Take-Aways

Remote Assessment Readiness Checklist



Determine scope suitability for remote assessment

- Review complexity and feasibility
- Discuss with your SAC account manager



Plan and Prepare ahead

- Coordinate resource availability and update scopes
- Allocate sufficient time for demonstration witnessing
- Digitalise and optimise quality documents and records
- Determine security and confidentiality policies on documentary/ records sharing



Resource checks

- High speed internet connection
- Mobile high resolution imaging devices
- Computing devices
- Familiarisation on setup and usage of systems and devices



Others

- Communicate, update internal team on assessment/ audit plan
- Familiarisation with roles and responsibilities for assessment/ audit day/s and conduct trials

Notes:

- Assessment and/or audit modalities shall achieve the same objective as an on-site
- Checklist serves as a guide

Potential Areas:



Smart Inspections



Biomedical and
Healthcare



Environmental
Sustainability



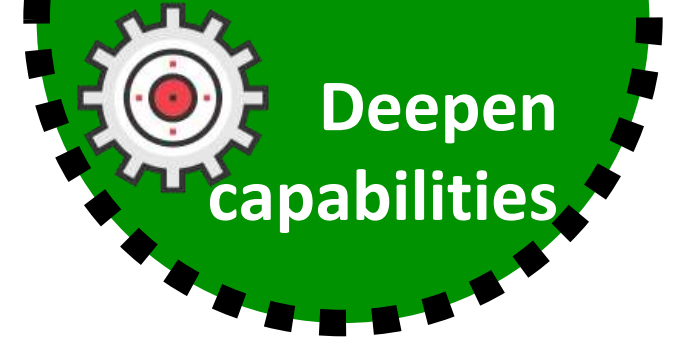
Food & Agriculture



Digitalisation &
Cybersecurity

Support Available

4.1 Funding Support – PSG



1 Enhanced Productivity Solutions Grant (PSG)

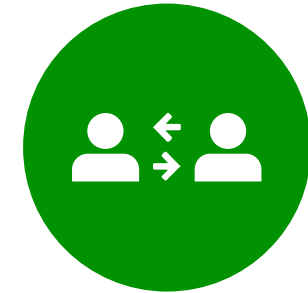
- Pre-scoped IT Solution and readily available solutions
- **Up to 80%** support of pre-approved productivity solutions and equipment



Online Collaboration &
Virtual meeting tools



Cyber-Security Solutions



Business/Process
Management Software

From 1 April 2020 – 31 December 2020

4.1 Funding Support – PSG

Examples of Supportable Projects



Online Collaboration & Virtual Meeting Tools

Hardware: eg laptops

Software: eg Video Conferencing Tools, Cloud Services and Microsoft Office etc



Cyber-Security Solutions

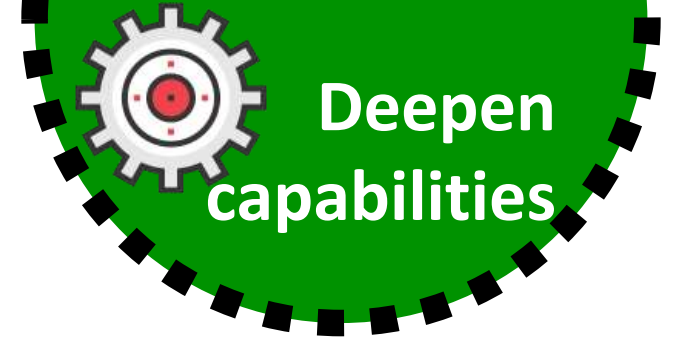
- Anti Virus Software
- Cyber-Security Software



Business/Process Management Software

- CRM System
- Inventory Management System
- Human Resource Management System

4.2 Funding Support – EDG



2

Enhanced Enterprise Development Grant (EDG)

- Supports projects that help businesses to build capabilities, improve productivity, adopt technology/digital solutions or venture overseas
- **Up to 80%** support for all eligible projects

For more info, please visit ESG website

From 1 April 2020 – 31 December 2020

4.3 Funding Support – STEER



3

Enhanced SG Together Enhancing Enterprise Resilience (STEER)

- ESG will match **\$1 for every \$2** raised by industry-led funds, up to **\$1m per fund**
- Supportable areas:



Manage cashflow



Grow businesses



Upgrade capabilities

- Interested TACs and industry groups can submit proposals to ESG from now until **2 March 2021**

For more info, please visit ESG website

From 1 April 2020 – 2 March 2021

4.3 Funding Support – STEER



Examples of leveraging STEER to upgrade capabilities

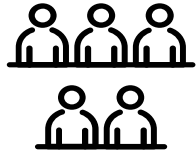


Adoption of Drones

- Upgrade capabilities through adoption of drones to perform TIC activities
- Train relevant staff/personnel to operate drones

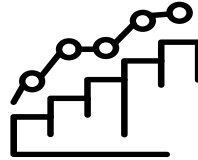
Moving Forward

5.1 Areas of Collaboration Between ESG & TIC IG



Champion the interests of the members via engagements with industry & policymakers:

- Centralized platform for ESG and other stakeholders to engage TIC players on TIC development initiatives
- Representation in various SAC and Standards Development committees
- Working through TIC IG to address issues/concerns from TIC companies/industry



Raise the profile and public awareness of TIC sector:

- Joint efforts with ESG to develop Singapore as the TIC Hub to address local and regional TIC demand
- Organize overseas mission trips



Upgrade the capabilities of TIC sector:

- Foster collaborations amongst TIC players to leverage support programmes such as STEER to build TIC capabilities
- Co-organize relevant training sessions/webinars

5.2 Upcoming Webinars/Activities

Topics	Tentative Date
Facilitating Market Access – TIC opportunities in Myanmar	End Oct 2020
[TBC] Regulators' Sharing – Outsourced TIC opportunities for TIC players	Nov/Dec 2020

Thank you!

ESG

Terence Hu – terence.hu@enterprisesg.gov.sg

Chea Wei Qiang – chea_weiqiang@enterprisesg.gov.sg

SMF-TIC IG Secretary

Lorelle Ang - lorelle.ang@smfederation.org.sg

Prasunna Ramadas - prasunna.ramadas@smfederation.org.sg