GUIDELINES FOR SELECTION OF INDUSTRY*4WRD* READINESS ASSESSMENT (RA) ASSESSING BODIES AND ASSESSORS

1. BACKGROUND

1.1. Industry*4WRD* Readiness Assessment (Industry*4WRD* RA) is a comprehensive programme to assist firms to assess their capabilities and readiness to adopt Industry 4.0 technologies and processes. The assessment uses a pre-determined set of indicators to understand their present capabilities and gaps, from which will enable the companies to prepare feasible strategies and plans to move towards industry 4.0.

1.2. The main objectives of the Industry*4WRD* RA are to:

1.2.1. Identify the gaps and areas of improvement for Industry 4.0 adoption as well as opportunities for productivity, improvement and growth;

1.2.2. Determine their state of readiness to adopt Industry 4.0 technologies outlined in the Industry*4WRD* Policy; and

1.2.3. Develop feasible strategies and plans to perform outcome-based intervention projects.

1.3. To achieve the programme objectives, Assessing Bodies (ABs) will be appointed to carry out assessment for companies in the manufacturing and manufacturing related services sectors.

2. GOVERNANCE STRUCTURE

2.1. All ABs shall be monitored by the following governance structure:
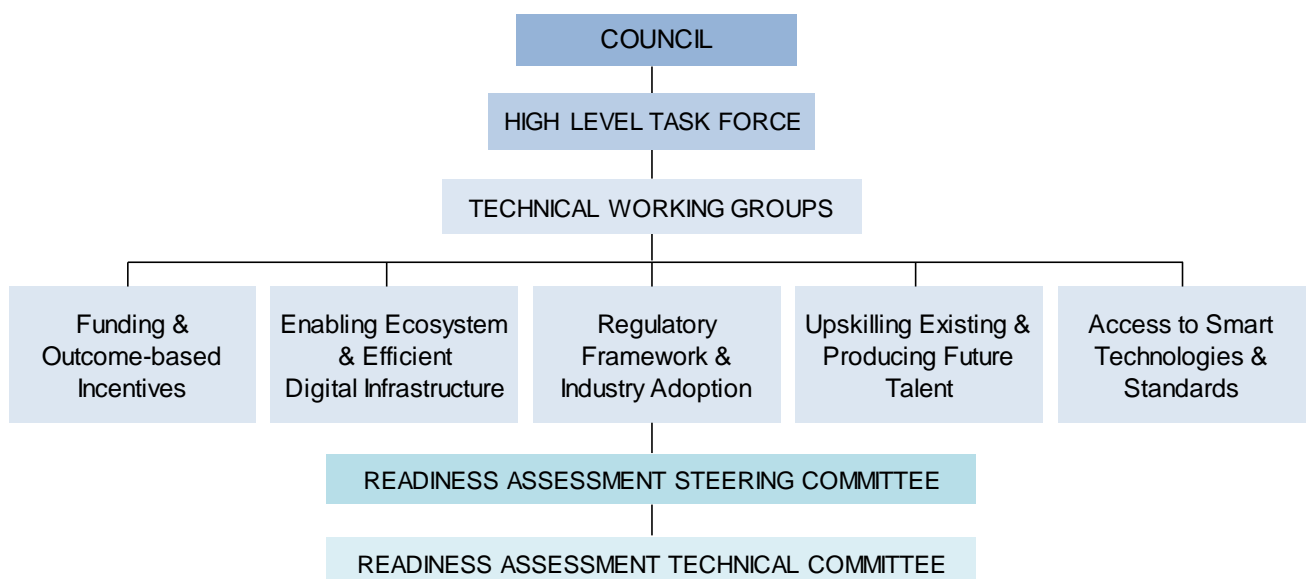
2.2. The RA Technical Committee (TC) shall consider application from interested organisations based on the requirements set out in this set of guidelines, and make recommendation to appoint ABs to the RA Steering Committee (SC).

2.3. The RA SC has the final right to appoint ABs and shall only appoint ABs based on recommendations of the RA TC.

3. **CRITERIA FOR ASSESSING BODIES**

3.1. Establishment:
   3.1.1. ABs must be incorporated in Malaysia under the Companies Act 2016;
   3.1.2. ABs must have a business address and operations in Malaysia;
   3.1.3. ABs must possess a valid business license from the local authority;
   3.1.4. ABs must have a minimum of three year business track record; and
   3.1.5. ABs must assume full liabilities in the issue of its RA reports.

3.2. Competency:
   3.2.1. ABs must have expertise and experience and credentials in carrying out assessment or audit related to Industry 4.0 readiness or conformity;
   3.2.2. ABs must be able to and will develop a documented process to carry out the Industry*4WRD* RA using the Industry*4WRD* RA Assessment Guidelines endorsed by the RA TC and SC;
   3.2.3. ABs must be have sufficient resources and be competent to utilize those resources to complete the Industry*4WRD* RA based on the assignments of RA TC and SC; and
   3.2.4. ABs with conformity assessment accreditation to any program by the Department of Standards Malaysia or other accreditation bodies will have added advantage.

3.3. Human resource:
   3.3.1. ABs must have at least ten (10) employees, who are in full-time employment and qualified to be assessors to carry out the assessment;
   3.3.2. ABs must have a documented process for determining the competence of employees to be qualified as assessor, based on requirements set out in this document; and
   3.3.3. ABs must also be committed to provide training regularly, when required by RA TC and at any time where additional training is required to ensure the assessors are always competent and qualified to carry out the Industry*4WRD* RA.

3.4. Quality:
    3.4.1. ABs must be able to demonstrate it has established and maintained a management system and be ISO 9001 certified.

3.5. Ethics:
    3.5.1. ABs must be able to demonstrate and safeguard impartiality in carrying out the Industry*4WRD* RA;
    3.5.2. Quality of assessment, professionalism, objectivity and ethical behavior must not be compromised by any commercial, financial and/ or personal interest; and
    3.5.3. ABs must have a documented anti-bribery control to prevent, identify and resolve any possibilities of bribery on an ongoing basis.

4. **CRITERIA FOR ASSESSORS**

4.1. Assessors and lead assessors must be full-time employees of the AB.

4.2. Knowledge and skills:
    4.2.1. Assessors and lead assessors must be able to conduct assessment in a consistent and systematic manner based on criteria of the Industry*4WRD* RA Assessment Guidelines;
    4.2.2. Assessors and lead assessors must be able to comprehend the structure, strategy, business and management practices implemented by the organisation assessed;
    4.2.3. Assessors and lead assessors must be able to operate within the legal and contractual requirements that apply to the organisation assessed;
    4.2.4. Assessors and lead assessors must be able to report the rationality of an organisation's assessment results as well as able to suggest feasible plans moving forward;
    4.2.5. Lead assessors must be able to review, finalise and approve assessments completed before submitting report to the secretariat of Industry*4WRD* RA TC by the deadline set by the secretariat; and
    4.2.6. Assessors and lead assessors must fulfill the requirements stated in Table 1.

4.3. Adherence to guiding principles:
    4.3.1. Integrity: Assessor should perform their work with honesty, diligence and responsibility; observe and comply with any applicable legal requirements; demonstrate their competence through tasks and in an impartial manner; as well as be alert to any influences exerted on their judgement while carrying out the assessment;

4.3.2. Fair presentation: All communication related to the assessment, i.e. assessment conclusions and reports, should be truthful, accurate, objective, timely, clear and complete;

4.3.3. Professionalism: Assessors should be professional throughout the whole process of carrying out their tasks;

4.3.4. Confidentiality: Assessors should maintain the confidentiality of information acquired in the course of their duties and those information should not be used inappropriately for personal gain, or in a manner detrimental to the legitimate interests of the organisation; and

4.3.5. Independence: Assessors should be independent of the activity being assessed wherever practicable and should in all cases act in a manner that is free from bias and conflict of interest.

4.4. Professional behaviour:

4.4.1. Ethical (i.e. fair, truthful, honest, discreet);

4.4.2. Open-minded (i.e. willing to consider alternative ideas);

4.4.3. Observant (i.e. actively observing physical surroundings and activities relevant to the assessment);

4.4.4. Perceptive (i.e. aware of and able to understand situations);

4.4.5. Versatile (i.e. able to readily adapt to different situations);

4.4.6. Decisive (i.e. able to reach timely conclusions based on logical reasoning and analysis);

4.4.7. Acting with fortitude (i.e. able to act responsibly and ethically, even though these actions may not always be popular and may sometimes result in disagreement or confrontation); and

4.4.8. Collaborative (i.e. effectively interact with others).

Table 1: Assessor and lead assessors requirement

Requirements	Assessors	Lead Assessors
Tertiary education	Yes	Yes
Working experience in any industry	At least 10 years	At least 15 years
Experience in audit or assessment programme	At least 5 years	At least 10 years
Involvement in projects related to Industry 4.0 or other related improvement initiatives	Yes	Yes; as project manager
Participation in training or skills development programmes related to Industry 4.0	Yes	Yes
Knowledge in productivity improvement programme (e.g. 5S, Six Sigma, Lean Manufacturing, Quality Control Circle (QCC), Total Productive Maintenance (TPM), Kaizen, etc.)	Proficient	Expert
Ability to accurately illustrate financial relationship and sector-specific benefits anticipated from the application of Industry 4.0 technologies and/or concepts	Proficient	Expert
Ability to differentiate the many types of sector-specific manufacturing systems	Proficient	Expert
Ability to differentiate automation levels according to the automation pyramid	Proficient	Expert
Ability to differentiate intelligence levels according to the cyber-physical system structure	Proficient	Expert

Requirements	Assessors	Lead Assessors
Ability to accurately assess a sustainability plan for smart factory developed by the organisation assessed (Understanding of sustainability concept is advantageous)	Proficient	Expert
Ability to accurately assess sector-specific technology roadmap developed by the organisation assessed (Understanding of technology readiness level (TRL) is advantageous)	Proficient	Expert
Ability to understand the different aspects of cyber security	Proficient	Expert
Ability to identify automation, cyber security and asset connectivity models needed by the organisation assessed	Proficient	Expert
Ability to plan assessment flow and lead an assessment team to conduct assessment	-	Expert
Ability to manage a team of assessors and the risks associated with the assessment activities	-	Expert
Ability to review and analyse assessment reports	-	Expert
Ability to develop an appropriate Industry 4.0 recommendation/ business model	-	Expert

Prepared by:

Ministry of International Trade and Industry
Malaysia