



## **BOARD OF ENGINEERS MALAYSIA**

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### **GUIDELINE NO. 007**

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#### **GUIDELINES ON ETHICAL USAGE OF DIGITALISATION TECHNOLOGY FOR ECPS AND REGISTERED PERSON**

In exercise of the powers conferred by paragraph 4(1)(f) of the Registration of Engineers Act 1967 [Act 138], the Board of Engineers Malaysia hereby determines guidelines on ethical usage of digitalization technology for ECPs and registered person as stated herein below:

#### **1. INTRODUCTION**

The digital economy has had a profound impact on society, including the national and global business landscape and market dynamics. New phenomena such as online platforms, social media, distributed ledger technology (such as blockchain), big data and online service providers affect business models and our understanding of what a “business” is. Digitalisation has a significant impact on the workplace, and has driven innovation in all sectors, but has also contributed to the transformation and disruption of traditional industries.

Along with the government effort to enhance the adoption rate of digitalization for all professional service firms, this new BEM guidelines is prepared to complement the existing code of conduct in the Registration of Engineers Regulation 1990 and the related Circulars, Guidelines and policy documents.

These guidelines are applicable to ECP and registered person.

#### **2. DEFINITION**

Digital technologies:

Digital technologies are electronic tools, systems, devices and resources that generate, store or process data.

Digitalisation:

Digitalisation is about the use of digital technologies and data, as well as interconnection that results in new activities, or changes to existing activities, or changes to existing activities.

#### **3. THE COMMON DIGITALIZATION TECHNOLOGY USED BY ECPS AND REGISTERED PERSONS ARE:**

- a) Cloud computing
- b) Communication Technologies
- c) Relevant application/ software
- d) Data Analytic including business intelligence
- e) Social networking/ online communities
- f) Multimedia and video
- g) Blogs & websites
- h) Artificial Intelligence
- i) Any other related digitalization/ Apps

A distinguishing mark of the engineering profession is its acceptance of the responsibility to act in the public interest. The engineering profession’s responsibility is not exclusively to satisfy the needs of an individual client. The engineering professions are bound by the Registration

of Engineers Act 1967 (REA), Registration of Engineers Regulation 1990 (RER) and circulars which sets the standards of professional ethics and professional conduct for the members of engineering professions in view of the professional responsibilities and duties owed to their clients, employers, the authorities and the public.

The Registration of Engineers Regulation 1990 (RER) sets up the Code of Conduct of ECPs and registered person in Part IV of the RER.

Accordingly, it is crucial that engineering professions understand the potential risks of technologies on their practices, services, operation and practice management and address the risks appropriately to ensure compliance with the BEM's legislation and policy documents.

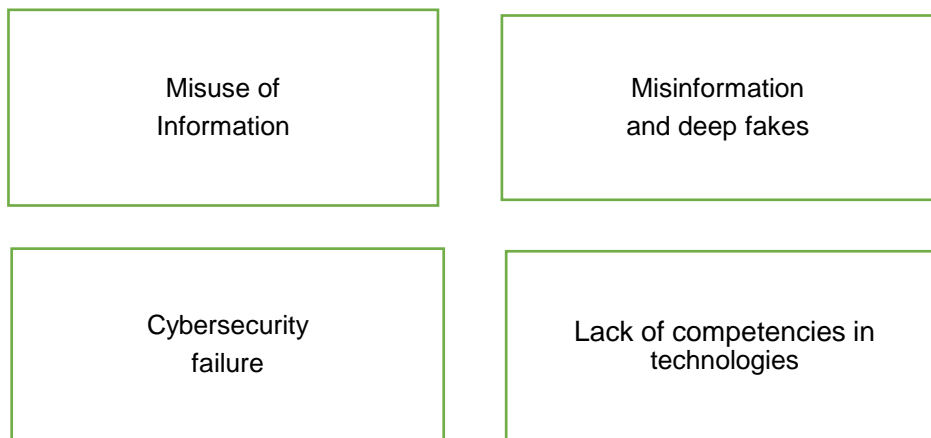
The typical approach for ECP and registered person in relation to ethical usage of digitalisation is to:

- a) Identify threats to compliance with the fundamental principles;
- b) Evaluate the threats identified;
- c) Address the threats by eliminating or reducing them to an acceptable level; and
- d) Create an SOP / guideline within the company to systematically eliminate the threats.

This guideline provides guidance to the engineering profession on the ethical principles to be applied in addressing the risks of technologies.

#### 4. POTENTIAL RISKS OF USING TECHNOLOGIES

There are various potential risks in using or relying on technologies which includes the following:



##### 4.1 Misuse of information

ECPs and registered person have access to various data within their own practice such as staff personal information or information from their clients such as bank accounts and details of their customers. As technology facilitates the ease of access to such information, there is a risk of such information being accessed by unauthorised person and used inappropriately.

##### 4.2 Misinformation and deep fakes

As information is freely created without the need of validation, ECP and registered person would face challenges in filtering such information and identify the appropriate information that will contribute to the work that they are doing. For example using misinformation from social media in relation to a consulting service for a client.

### 4.3 Cybersecurity failure

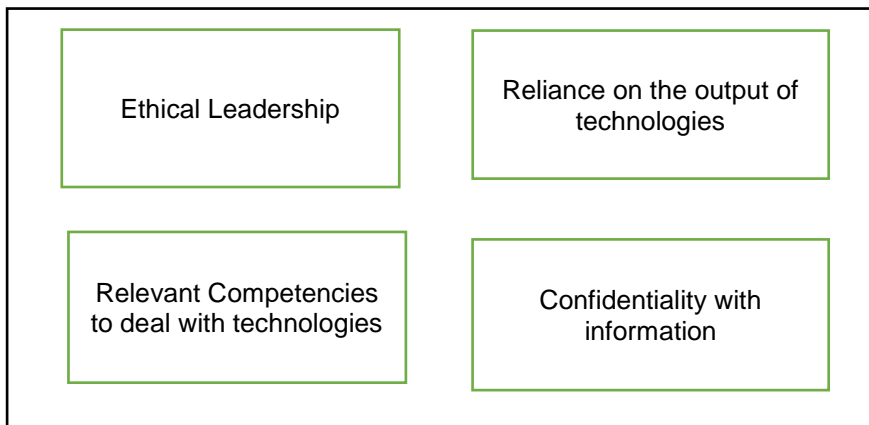
According to the Global Risks Report 2022, cybersecurity failure is one of the top ten risks globally in the next two to five years. ECP and registered person are exposed to such risk either in relation to their own practice or information they held on their clients. Cybersecurity issues can affect public practitioners and their reputation. There is the risk that a hacker might obtain sensitive information such as bank account or credit cards details. When the hacker obtains sensitive information about the ECP and registered person or their clients, they may find their reputation ruined. The damage to reputation and goodwill might be more severe than the actual data loss itself. Loss of clients' data may result in legal or regulatory action against the public practitioners. The clients might file a suit against the public practitioners as they incurred a loss following such failure.

### 4.4 Lack of competencies in digitalisation technologies

When using technology within their practice or in the provision of services, ECP and registered person may need to improve on relevant competencies in the technologies used and how such technologies affect their practices or services. Such lack of competencies may potentially create biases or a general risk of over-reliance on the information or output of the procedures performed.

## 5. ETHICAL PRINCIPLES IN DIGITALISATION TECHNOLOGY USAGE BY PRACTISING ENGINEERS

The ethical principles in technology usage by ECP and registered person are as follows:



### 5.1 Ethical leadership

As ECP and registered person increasingly involve in using, developing, implementing or relying on technologies, ECP and registered person should demonstrate a commitment towards ethical behaviour in their involvement in technology for those purposes as this will set the overall tone within the practice and influence the behaviour of all personnel within the practice.

ECP and registered Person should demonstrate such commitment by:

- Demonstrate commitment to ethics through their actions and behaviours.
- The importance of ethics in the practice's strategic decisions and actions.
- The organizational structure and assignment of roles, responsibilities and authority is appropriate to enable ethical behaviours.

- Resource needs, including financial resources, are planned for and resources are obtained, allocated or assigned in a manner that is consistent with the practice's commitment to being ethical.

## 5.2 **Reliance on the output of digitalisation technologies**

When the ECP and registered Person rely on the output of technologies either within their practice or servicing their clients, they need to determine whether the reliance on the output of technologies is reasonable. Factors to consider include:

- The nature of the activity to be performed by the technology.
- The expected use of, or extent of reliance on, the output from the technology.
- The ability to understand the output from the technology for the context in which it is to be used.
- Whether the technology is established and effective for the purpose intended.
- Whether new technology has been appropriately evaluated for the purpose intended.
- The appropriateness of the inputs to the technology, including data and any related decisions.

## 5.3 **Relevant competencies to deal with digitalisation technologies**

ECP and registered person are required to maintain relevant competence which includes a continuing awareness and an understanding of technology-related developments.

## 5.4 **Confidentiality of information**

In light of today's data-driven world and the ease with which data are accessible, ECP and registered person must maintain the confidentiality of information acquired either within their practice or with their clients. ECP and registered person should take appropriate action to secure such information in the course of its collection, use, transfer, storage, dissemination and lawful destruction.

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