FBPML
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The Foundation for Best Practices in Machine Learning

Championing ethical and responsible machine learning through open-source best practices

Organisation Best Practices

Organisation Best Practices
from
The Foundation for Best Practices in Machine Learning

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Foreword

The promise and value of machine learning is great, but it has been hastily operationalised over the past decade with often little regard for its wider societal impact, sometimes resulting in harmful and unfair consequences.

We, at The Foundation for Best Practices in Machine Learning, want to help data scientists, governance experts, management and other machine learning professionals champion ethical and responsible machine learning. We do this through championing our technical and organisational best practices for machine learning, through the free, open-source guidelines you are currently reading.

The aim of these Best Practices is to be easily accessible to anyone working on or interested in machine learning. This means that they are designed for a large audience who come from a variety of backgrounds and organisations.

At the same time these Best Practices also aim to be complete. Although this means that they can be long at times, please do not be intimidated - read as much or as little as you feel comfortable with and come back later for more. The Best Practices are designed to be adaptable to different organisation sizes, needs, risks, resources, and expected societal impact and so the implementation can be flexible.

Creative Commons Licence

Because we want to lower the barriers to ethical and responsible machine learning, our Best Practices have been licensed under the Creative Commons Attribution license. This means they are freely available for commercial and/or private use and/or adaption, subject to attributing (i.e. referencing) The Foundation of Best Practices of Machine Learning of course.

Who are we?

We are a team of seasoned data scientists, machine learning engineers, AI ethicists and governance experts, who are enthusiastic about lowering the barriers for pragmatic ethical and responsible machine learning.

Best regard, The Board of FBPML
May, 2021

Contents

Introduction

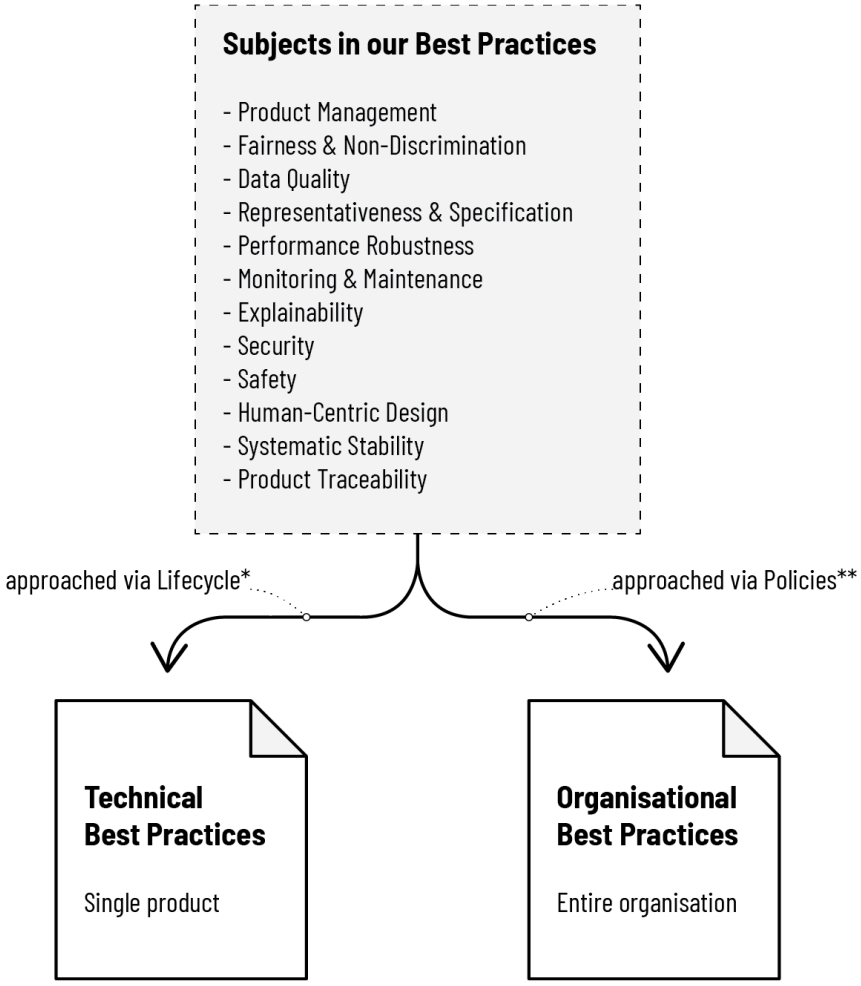
If you are not familiar yet with the Foundation for Best Practices in Machine Learning, and you want to know more about who we are, what we do, and what the philosophy and vision behind the Best Practices are, please visit our website.

On the next pages, you will find an explanation and overview of the structure of our Best Practices. Before diving straight into that, we would like to let you know about the following:

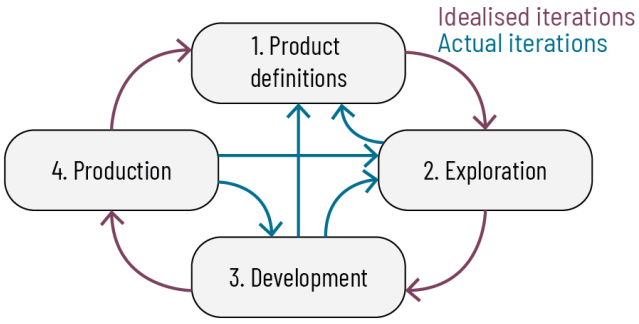
- These Best Practices are available through our Wiki-style portal too, and you'll also be able to find and contribute additional supporting material there.
- These Best Practices are open-source and rely on community contributions for continuous improvements. To find out how to contribute please have a look at our contribution guide;
- For tips on where to get started with implementing the Best Practices please have a look at our User Guides. Come back often, as we will be continuously adding new advice.

How to read the best practices

FBPML has two Best Practices documents. You are currently looking at the Organisation Best Practices. The core content of both Best Practices are the subjects you see below.



*** Lifecycle**

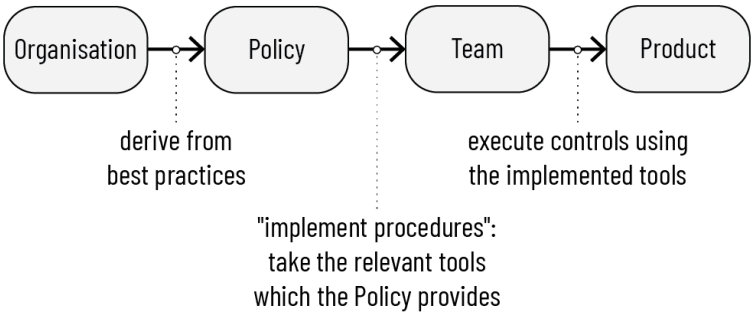


The Technical Best Practices are scoped for a single product (which includes the ML models) and are aimed at helping your team best develop and maintain this product in an ethical and responsible way. The subjects within the Best Practices are approached through Product Lifecycle phases:

Each subject's Best Practices are grouped by phases, so that the Risks and Controls are in the same order as you would typically encounter them during the first iteration of your product. Of course, during the lifecycle of your product, you will revisit each phase very often. Therefore, you will revisit the associated Best Practices too.

The Organisation Best Practices are scoped for the entire organisation. It advises how to effectively support product teams within an organisation. This support is clustered around the core subjects mentioned above. These are approached through Policies. Management and governance aspects that are overarching receive attention as well.

**** Policies**



About the wording

"Controls" and "Aims"

The Best Practices are written in a certain format wherein each "rule" consists of a number, name, Control and Aim.

- The Controls are actions to take and can be understood as the instructions. The "what to do";
- the Aim is why you should do it, sometimes phrased as a goal, but more often as a risk. The "this is what can happen if you do not do it" and/or "this is why it is important".

"Product"

The Product is our word for the technical system around which the Best Practices revolve. It is used to refer to not only the data, the machine learning model and code, but also every component and process from start to finish that is required to produce the desired effect in practice - from UI to the protocols and processes that embed models in the organization and everything in between.

Section 1. Definitions

As used in this Best Practice Guideline, the following terms shall have the following meanings where capitalised. All references to the singular shall include references to the plural, where applicable, and vice versa. Any terms not defined or capitalised in this Best Practice Guideline shall hold their plain text meaning as cited in English and data science.

1.1.	Adversarial Action	means actions characterised by mala fide (malicious) intent and/or bad faith.
1.2.	Assessment	means the action or process of making a series of determinations and judgments after taking deliberate steps to test, measure and collectively deliberate the objects of concern and their outcomes.
1.3.	Assets	means information technology hardware that concerns Products Machine Learning.
1.4.	Business Stakeholders	means the departments and/or teams within the Organisation who do not conduct data science and/or technical Machine Learning, but have a material interest in Products Machine Learning.
1.5.	Corporate Governance Principles	mean the structure of rules, practices and processes used to direct and manage a company in terms of industry recognised and published legal guidelines.
1.6.	Data Governance	means the systems of governance and/or management over data assets and/or processes within an Organisation.
1.7.	Data Quality	means the calibre of qualitative or quantitative data.
1.8.	Data Science	means an interdisciplinary field that uses scientific methods, processes, algorithms and computational systems to extract knowledge and insights from structured and/or unstructured data.
1.9.	Domain	means the societal and/or commercial environment within which the Product will be and/or is operationalised.
1.10.	Ethical Practices	means the ethical principles, values and/or practices that are encapsulated and promoted in an 'artificial intelligence' ethics guideline and/or framework, such as (a) The Asilomar AI Principles (Asilomar AI Principles, 2017), (b) The Montreal Declaration for Responsible AI (Montreal Declaration, 2017), (c) The Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems (IEEE, 2017), and/or (d) any other analogous guideline and/or framework.
1.11.	Ethics Committee	means the committee within the Organisation charged with managing and/or directing organisation Ethical Practices.
1.12.	Executive Management	means the managerial team at the highest level of management within the Organisation.
1.13.	Explainability	means the property of Models and Model outcomes to be interpreted and/or explained by humans in a comprehensible manner.

1.14.	Fairness & Non-Discrimination	means the property of Models and Model outcomes to be free from bias against protected classes.
1.15.	Best Practice Guideline	means this document.
1.16.	Guide	means an established and clearly documented series of actions or process(es) conducted in a certain order or manner to achieve particular outcomes.
1.17.	Human-Centric Design & Redress	means orienting Products and/or Models to focus on humans and their environments through promoting human and/or environment centric values and resources for redress.
1.18.	Incident	means the occurrence of a technical event that affects the integrity of a Product and/or Model.
1.19.	Machine Learning	means the use and development of computer systems and Models that are able to learn and adapt with minimal explicit human instructions by using algorithms and statistical modelling to analyse, draw inferences, and derive outputs from data.
1.20.	Model	means Machine Learning algorithms and data processing designed, developed, trained and implemented to achieve set outputs, inclusive of datasets used for said purposes unless otherwise stated.
1.21.	Organisation	means the concerned juristic entity designing, developing and/or implementing Machine Learning.
1.22.	Performance Robustness	means the propensity of Products and/or Models to retain their desired performance over diverse and wide operational conditions.
1.23.	Policy	means a documented course of normative actions or set of principles adopted to achieve a particular outcome.
1.24.	Procedure	means an established and defined series of actions or process(es) conducted in a certain order or manner to achieve a particular outcome.
1.25.	Product	means the collective and broad process of design, development, implementation and operationalisation of Models, and associated processes, to execute and achieve Product Definitions, inclusive of, inter alia, the integration of such operations and/or Models into organisation products, software and/or systems.
1.26.	Product Team	means the collective group of Organisation employees directly charged with designing, developing and/or implementing the Product.
1.27.	Product Lifecycle	means the collective phases of Products from initiation to termination - such as design, exploration, experimentation, development, implementation, operationalisation, and decommissioning - and their mutual iterations.
1.28.	Product Owner	means the employee charged with (a) managing and maximising the value of the Product and its Product Team; and (b) engaging with various Business Stakeholders concerning the Product and its Product Definitions.

1.29.	Public	means society at large.
1.30.	Public Interest	means the welfare or well-being of the Public.
1.31.	Representativeness	means the degree to which datasets and Models reflect the true distribution and conditions of Subjects, Subject populations, and/or Domains.
1.32.	Safety & Security	means (a) the resilience of Products and/or Models against malicious and/or negligent activities that result in Organisational loss of control over concerned Products and/or Models; and (b) real Product Domain based physical harms that result through Products and/or Models applications
1.33.	Social Corporate Responsibilities	means the structure of rules, practices and processes used to direct and manage a company in terms of industry recognised and published legal guidelines to positively contribute to economic, environmental and social progress.
1.34.	Software	means information technology software that concerns Products Machine Learning.
1.35.	Special Interest Groups	means a specific body politic, or a particular collective of citizens, who can reasonably be determined to have a material interest in the Product.
1.36.	Specification	means the accuracy, completeness and exactness of Products, Models and/or datasets in reflecting Product Definitions, Product Domains and/or Product Subjects, either in their design and development and/or operationalisation.
1.37.	Subjects	means the entities and/or objects that are represented as data points in datasets and/or Models, and who may be the subject of Product and/or Model outcomes.
1.38.	Systemic Stability	means the stability of Organisation, Domain, society and environments as a collective ecosystem.
1.39.	Traceability	means the ability to trace, recount, and reproduce Product outcomes, reports, intermediate products, and other artifacts, inclusive of Models, datasets and codebases.
1.40.	Transparency	means the provision of an informed target audiences understanding of Organisation and/or Products Machine Learning, and their workings, based on documented Organisation information.
1.41.	Workflows	means the coordinated and standardised sequences of employee work activities, processes, and tasks.

Part A
Organisation

Section 2. Managerial Oversight & Management

2.1 Management Direction for Machine Learning

Objective
To ensure managerial direction and support for Products in accordance with Organisation strategies, business requirements, Corporate Governance Principles, Social Corporate Responsibilities, legal regulations and Ethical Practices.

		Control:	**Aim:**
2.1.1.	Management Committee	A managerial committee ought to be established to (a) oversee Organisation Machine Learning and Products; and (b) warrant their effective alignment in accordance with Organisation strategies, business requirements, Corporate Governance Principles, Social Corporate Responsibilities, legal regulations and Ethical Practices.	To ensure clear managerial responsibility, oversight and custody of Organisation Machine Learning and Products.
11.1.2.	Management Committee Diversity	The Management Committee ought to hold a diversity of members from differing Organisation departments, including Executive Management, legal, finance, operations, public communications as well as Data Science.	To (a) ensure the diversity of managerial opinions and oversight of Organisation Machine Learning and Products; and (b) foster Organisation buy-in for Machine Learning and Products.
11.1.3.	Managerial Oversight Procedures	The Management Committee should establish appropriate Procedures to warrant managerial oversight and governance of Organisation Products, inclusive of the appointment of Data Science Managers.	To ensure the operationalisation of the oversight and management of Organisation Machine Learning and Products by the Management Committee.

Section 3. Internal Organisation Management & Oversight

3.1 Internal Organisation

Objective
To establish managerial Procedures to control and oversee the design, development and implementation of Products.

		Control:	**Aim:**
3.1.1.	Data Science Managers	The Management Committee should appoint Data Science Managers to oversee Products and warrant their effective alignment in accordance with the directives of the Management Committee, Policies, and, more broadly, Organisation strategies, business requirements, Corporate Governance Principles, Social Corporate Responsibilities, legal regulations and Ethical Practices.	To ensure the clear management, oversight, ownership and custody of Products.
3.1.2.	Data Science Managers Products Ownership and Custody	The Management Committee ought to define and allocate to Data Science Managers Products.	To ensure clear managerial oversight, ownership and custody of Products.
3.1.3.	Data Science Managers Segregation of Duties	Conflicting duties and areas of responsibility of Data Science Managers should be segregated to reduce opportunities for the unauthorised and/or unintentional modification and/or misuse of Products.	To reduce the threat of Product abuse, misuse and/or mala fide actions by Data Science Managers.
3.1.4.	Product Owners	Data Science Managers ought to appoint Product Owners to (a) oversee specific Products and Product Teams; and (b) warrant their effective management in accordance with the directives of Data Science Managers, the Management Committee, and Organisation Policies.	To ensure the clear management, oversight, ownership and custody of a Product and its Product Team.
3.1.5.	Product Owners Ownership and Custody	Data Science Managers ought to define and allocate to designated Product Owners Products and Product Teams.	To ensure clear managerial oversight, ownership and custody of a Product and its Product Team.

3.1.6.	Product Owners Segregation of Duties	Conflicting duties and areas of responsibility of Product Owners should be segregated to reduce opportunities for the unauthorised and/or unintentional modification and/or misuse of a Product.	To reduce the threat of Product abuse, misuse and/or mala fide actions by Product Owners.
3.1.7.	Product Teams	Data Science Managers, in consultation with Product Owners, should define and allocate Products to designated Product Teams.	To ensure clear Product ownership and custody.
3.1.8.	Product Definitions	Data Science Managers, Product Owners, Business Stakeholders and, when relevant, Product employees ought to collectively document and define clear Product definitions, aims, internal deliverables and outcomes.	To ensure Products have clear scopes to warrant (a) their effective oversight, management and execution, as well as (b) to allow for the accurate evaluation of Product risks and controls.
3.1.9.	Approval of Product Definitions	The Management Committee should review and approve Product Definitions.	To ensure managerial oversight of Products scopes.
3.1.10.	Product Definitions Review	Product Definitions ought to be reviewed periodically, or if significant changes occur, by Data Science Managers, Product Owners, Business Stakeholders and, when relevant, Product employees.	To ensure that Product Definitions are kept up-to-date to ensure their continued effectiveness, suitability, and accuracy.
3.1.11.	Product Risk Classification Policy	A Policy and Guide, which standarises the approaches to assessing Product risks, ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure that (a) clear guidelines exist on how to evaluate and determine Product based-risks for subsequent evaluation in Product Risk Portfolios; and (b) Products are assigned risk-appropriate mandatory minimum capacity and oversight.
3.1.12.	Product Risk Classification Portfolio	Data Science Managers, Product Owners, Business Stakeholders and, when relevant, Product employees ought to collectively document and interrogate (a) Product Definitions and (b) Product design, development and implementation to identify Product based-risks and assign Product risk values and classifications.	To ensure Products have clear risk portfolios to warrant (a) their effective oversight, management and execution, as well as (b) to allow for the accurate evaluation of Product risks and controls.
3.1.13.	Approval of Product Risk Classification Portfolio	The Management Committee should review and approve Product Risk Portfolios.	To ensure managerial oversight of Products risks.
3.1.14.	Product Product Risk Classification Portfolio Review	The Product Risk Classification Portfolio ought to be continuously reviewed and developed by Data Science Managers, Product Owners, Business Stakeholders and, when relevant, Product employees.	To ensure that Product Risk Portfolios are kept up-to-date to ensure their continued effectiveness, suitability, and accuracy.

3.2 Product Management

Objective
To establish Procedures to control the design, development and implementation of Products.

		Control:	**Aim:**
3.2.1.	Product Lifecycle Guide	Data Science Managers and, when relevant, Product Owners should derive a clear Product Lifecycle Guide for the Organisation.	To ensure a clear organisational Product Lifecycle Guide to warrant the effective management and oversight of Machine Learning.
3.2.2.	Product Lifecycle and Workflow Descriptions	Having consideration for the Product Lifecycle Policy, Product Definitions, and the Product Risk Classification Portfolio, Product workflows ought to be derived, developed, and documented by Data Science Managers, Product Owners and, when relevant, Product employees for each Product.	To ensure clear Lifecycle and Workflows for Products to warrant their effective management and oversight.
3.2.3.	Reviewed of Product Lifecycle Guide	The Product Lifecycle Guide should be reviewed and approved by Data Science Managers and, when relevant, the Management Committee.	To ensure managerial oversight of the Product Lifecycle Guide.
3.2.4.	Reviewed of Product Lifecycle and Workflow Description	Product Lifecycle and Workflow Descriptions should be reviewed and approved by Data Science Managers and, when relevant, the Management Committee.	To ensure managerial oversight of Product Lifecycle and Workflow Descriptions.
3.2.5.	Product Lifecycle and Workflow Procedures	Each Product ought to derive, develop and implement a set of Procedures to operationalise Product Lifecycle and Workflow Descriptions.	To ensure the operationalisation of Product Lifecycle and Workflow Descriptions.
3.2.6.	Reviewed of Product Lifecycle and Workflow Procedures	The Product Lifecycle and Workflow Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Product Lifecycle and Workflow Procedures are kept up-to-date.
3.2.7.	Product Employee Roles and Responsibilities	Data Science Managers and Product Owners ought to define and allocate to Product employees defined responsibilities and roles in terms of Product Lifecycle and Workflow Descriptions.	To establish clear employee responsibilities and custodies in terms of Product Lifecycle and Workflow Descriptions.

3.2.8.	Data Science Managers Reports	Frequent reports detailing Product progress, changes and risks ought to be made to the Management Committee by Data Science Managers and, subsequently, reviewed timeously.	To ensure the clear communication and management of Product deliverables to the Management Committee.
3.2.9.	Product Owners Reports	Frequent reports detailing Product progress, changes and risks ought to be made to the Data Science Managers and Business Stakeholders by Product Owners and, subsequently, reviewed timeously.	To ensure the clear communication and management of Product deliverables to Data Science Managers and Business Stakeholders.

Part B
PRODUCT AND MODEL MANAGEMENT

Section 4. Data Governance

4. Data Governance

Objective
To ensure the integrity, normalisation, fairness and non-discrimination of Projet and/or Model data.

		Control:	**Aim:**
4.1.	Data Governance Policy	A Policy and Guide, which promotes good Data Governance in Product and Model design, development, and implementation ought to be derived by Data Science Managers and approved by the Managerial Committee. If a generic Data Governance Policy already exists, the above should be integrated accordingly.	To (a) ensure the integrity, normalisation, fairness and non-discrimination of Product and/or Model data; and (b) provide clear Organisation guidance to Products on how to warrant data integrity, normalisation, fairness and non-discrimination.
4.2.	Data Governance Procedures	A set of Procedures to operationalise the Data Governance Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and Product Lifecycle and Workflow Descriptions.	To ensure the Data Governance of Products and Models.

Section 5. Product and Model Oversight & Management

5.1 Fairness & Non-Discrimination

Objective
To (a) identify possible risks for protected classes of persons, animals and the natural environment; and (b) minimise the unequal distribution of Products and Models errors to prevent reinforcing and/or deriving social inequalities and/or ills.

		Control:	**Aim:**
5.1.1.	Fairness Policy	A Policy and Guide, which promotes Product Fairness in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Fairness of Machine Learning. To provide clear Organisation guidance to Products on how to - (a) identify biases in Product data and Models; (b) take remedial action against identified biases; (c) identify and reduce asymmetric error rates between subpopulations; and (d) implement design and processes to avoid and circumvent risks that cannot be solved by purely technical means.
5.1.2.	Product Fairness Procedures	A set of Procedures to operationalise the Fairness Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Fairness of Products and Models.
5.1.3.	Fairness Assessments	Products should regularly complete Fairness assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Fairness and non-discrimination at regular intervals within the Product Lifecycle and Workflow Description.
5.1.4.	Review of the Fairness Policy	The Fairness Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Fairness Policy is kept up-to-date.

5.1.5.	Review of Product Fairness Procedures	Product Fairness Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Fairness Procedures are kept up-to-date.

5.2 Data Quality

Objective
To ensure Data Quality and prevent unintentional effects, changes and/or deviations in Products and Models outputs associated with poor Product data.

		Control:	**Aim:**
5.2.1.	Data Quality Policy	A Policy and Guide, which describes the assessment and remediation of an Organisation's Data Quality. Chapters relating to (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived and included by Data Science Managers and approved by the Managerial Committee.	To ensure the Data Quality of Machine Learning. To provide Product Teams with reliable guidance on how to - (a) identify Data Quality risks; (b) take remedial actions against identified Data Quality risks; and (c) take steps to account for Data Quality risks and associated issues.
5.2.2.	Product Data Quality Procedures	A set of Procedures to operationalise the Data Quality Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions .	To ensure the Data Quality of Products and Models.
5.2.3.	Data Quality Assessments	Products should regularly complete Data Quality assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Data Quality at regular intervals within the Product Lifecycle and Workflow Description.
5.2.4.	Review of the Data Quality Policy	The Data Quality Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Data Quality Policy is kept up-to-date.
5.2.5.	Review of Product Data Quality Procedures	Product Data Quality Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Data Quality Procedures are kept up-to-date.

5.3 Representativeness & Specification

Objective
To (a) ensure that Product data and Models are representative of, and accurately specified for, target environments as far as is reasonably practical; and (b) guard against unintentional Products and Models behaviours and outputs as far as is reasonably practical.

		Control:	**Aim:**
5.3.1.	Representativeness & Specification Policy	A Policy and Guide, which promotes Representativeness and Specification in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Representativeness and Specification of Machine Learning. To provide Product Teams with reliable guidance on how to - (a) identify Representativeness and Specification risks; (b) redress misspecification; and (c) remedy mis-, under- or over-representation risks.
5.3.2.	Product Representativeness & Specification Procedures	A set of Procedures to operationalise the Representativeness & Specification Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Representativeness and Specification of Products and Models.
5.3.3.	Representativeness & Specification Assessments	Products should regularly complete Representativeness & Specification assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Representativeness and Specification at regular intervals within the Product Lifecycle and Workflow Description.
5.3.4.	Review of the Representativeness & Specification Policy	The Representativeness & Specification Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Representativeness & Specification Policy is kept up-to-date.
5.3.5.	Review of Product Representativeness & Specification Procedures	Product Representativeness & Specification Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Representativeness & Specification Procedures are kept up-to-date.

5.4 Performance Robustness

Objective
To warrant Model outcomes and prevent unintentional Model behaviour a priori under operational conditions as far as is reasonably practical.

		Control:	**Aim:**
5.4.1.	Performance Robustness Policy	A Policy and Guide, which promotes Product Performance Robustness in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Performance and Robustness of Machine Learning. To provide Product Teams with reliable guidance on how to - (a) test, control, and improve Performance Robustness under operational conditions before going live; and (b) assess and control Performance Robustness risks concerning unexpected conditions.
5.4.2.	Product Performance Robustness Procedures	A set of Procedures to operationalise the Performance Robustness Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions .	To ensure the Performance Robustness of Products and Models.
5.4.3.	Performance Robustness Assessments	Products should regularly complete Performance Robustness Assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Performance Robustness at regular intervals within the Product Lifecycle and Workflow Description.
5.4.4.	Review of the Performance Robustness Policy	The Performance Robustness Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Performance Robustness Policy is kept up-to-date.
5.4.5.	Review of Product Performance Robustness Procedures	Product Performance Robustness Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Performance Robustness Procedures are kept up-to-date.

5.5 Monitoring & Maintenance

Objective
To ensure that Products and Models remain within acceptable operational bounds.

		Control:	**Aim:**
5.5.1.	Monitoring & Maintenance Policy	A Policy and Guide, which promotes Product monitoring and maintenance in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the monitoring and maintenance of Machine Learning. To provide Product Teams with reliable guidance on how to - (a) define, monitor and maintain acceptable operating bounds, including, inter alia, guarding against model drift; (b) define and review alert conditions and severity; and (c) create scenario playbooks regarding responsibility, escalation, roll-back and resolution.
5.5.2.	Product Monitoring & Maintenance Procedures	A set of Procedures to operationalise the Monitoring & Maintenance Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the monitoring and maintenance of Products and Models.
5.5.3.	Monitoring & Maintenance Assessments	Products should regularly complete Monitoring & Maintenance assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product monitoring and maintenance at regular intervals within the Product Lifecycle and Workflow Description.
5.5.4.	Review of the Monitoring & Maintenance Policy	The Monitoring & Maintenance Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Monitoring & Maintenance Policy is kept up-to-date.
5.5.5.	Review of Product Monitoring & Maintenance Procedures	Product Monitoring & Maintenance Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Monitoring & Maintenance Procedures are kept up-to-date.

5.6 Explainability

Objective
To ensure Products and Models functions and outputs are explainable and justifiable as far as is practically reasonable.

		Control:	**Aim:**
5.6.1.	Explainability Policy	A Policy and Guide, which promotes Product Explainability in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Explainability of Machine Learning. To provide clear Organisation guidance to Products on how to - (a) ensure the justifiability of individual Model predictions and decisions; (b) maintain and promote Product and Model inner workings amongst Product Teams, Business Stakeholders, Organisation Stakeholders and end-consumers; and (c) provide Model transparency for authorities, Special Interest Groups and/or the Public.
5.6.2.	Product Explainability Procedures	A set of Procedures to operationalise the Explainability Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Explainability of Products and Models.
5.6.3.	Explainability Assessments	Products should regularly complete Explainability assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Explainability at regular intervals within the Product Lifecycle and Workflow Description.
5.6.4.	Review of the Explainability Policy	The Explainability Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Explainability Policy is kept up-to-date.
5.6.5.	Review of Product Explainability Procedures	Product Explainability Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Explainability Procedures are kept up-to-date.

5.7 Safety & Security

Objective
To (a) prevent adversarial actions against, and encourage graceful failures for, Products and/or Models; (b) avert malicious extraction of Models, data and/or intellectual property; (c) prevent Model based physical or irreparable harms; and (d) prevent erosion of trust in outputs or methods.

		Control:	**Aim:**
5.7.1.	Safety & Security Policy	A Policy and Guide, which promotes Product Safety & Security in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Safety of Machine Learning. To provide clear Organisation guidance to Products on how to identify and guard against Product vulnerabilities from Adversarial Actions.
5.7.2.	Product Safety Procedures	A set of Procedures to operationalise the Safety Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions .	To ensure the Safety of Products and Models.
5.7.3.	Safety Assessments	Products should regularly complete Safety assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Safety at regular intervals within the Product Lifecycle and Workflow Description.
5.7.4.	Review of the Safety Policy	The Safety Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Safety Policy is kept up-to-date.
5.7.5.	Review of Product Safety Procedures	Product Safety Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Safety Procedures are kept up-to-date.

5.8 Human-Centric Design & Redress

Objective
To ensure (a) building desirable solutions; (b) human control over Products and Models; and (c) that individuals affected by Products and Models outputs can obtain redress.

		Control:	**Aim:**
5.8.1.	Human-centric Design & Redress Policy	A Policy and Guide, which promotes Product Human-Centric Design & Redress in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Human-Centric Design & Redress of Machine Learning. To provide clear Organisation guidance to Products on how to - (a) adds value and desirability of your product for end users; (b) assess and implement human-in-control requirements; and (c) assess and implement human-centric remediation and redress.
5.8.2.	Product Human-Centric Design & Redress Procedures	A set of Procedures to operationalise the Human-Centric Design & Redress Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Human-Centric Design & Redress of Products and Models.
5.8.3.	Human-Centric Design & Redress Assessments	Products should regularly complete Human-Centric Design & Redress assessments according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Human-Centric Design & Redress at regular intervals within the Product Lifecycle and Workflow Description.
5.8.4.	Review of the Human-Centric Design & Redress Policy	The Human-Centric Design Policy & Redress should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Human-Centric Design & Redress Policy is kept up-to-date.
5.8.5.	Review of Product Human-Centric Design & Redress Procedures	Product Human-centric Design & Redress Procedures should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Human-Centric Design & Redress Procedures are kept up-to-date.

5.9 Systemic Stability

Objective
To prevent (in)direct adverse social and environmental effects as a consequence of interactions amongst Products, Models, the Organisation, and the Public.

		Control:	**Aim:**
5.9.1.	Systemic Stability Policy	A Policy and Guide, which promotes awareness and control of systemic effects and interactions in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Systemic Stability of Machine Learning. To provide clear Organisation guidance to Products on how to identify, analyse and prevent risks derived from (higher-order and/or highly complex) relations between Products, Models, Product design, Organisation processes and society at large.
5.9.2.	Product Systemic Stability Procedures	A set of Procedures to operationalise the Systemic Stability Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Systemic Stability of Products.
5.9.3.	Systemic Stability Assessments	Products should regularly complete Systemic Stability according to Product Lifecycle and Workflow Descriptions to the extent that is reasonably practical. Assessment findings ought to be documented by the Product Team and reviewed by Data Science Managers and, when relevant, the Management Committee.	To analyse, test, and report the risks identified with, and measures taken to ensure, Product Systemic Stability at regular intervals within the Product Lifecycle and Workflow Description.
5.9.4.	Review of the Systemic Stability Policy	Systemic Stability should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Systemic Stability Policy is kept up-to-date.
5.9.5.	Review of Systemic Stability Procedures	Product Systemic Stability should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Systemic Stability Procedures are kept up-to-date.

5.10 Product Traceability

Objective
To ensure the clear and complete Traceability of Products, Models and their assets (inclusive of, inter alia, data, code, artifacts, output, and documentation) for as long as is reasonably practical.

		Control:	**Aim:**
5.10.1.	Product Traceability Policy	A Policy and Guide, which promotes Product Traceability during and after - (a) Product Definitions and Product design, development, and implementation; (b) data processing; and (c) Model design, development, training, and output ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the Product Traceability of Machine Learning. To provide clear Organisation guidance to Products on how to manage Product Traceability.
5.10.2.	Product Traceability Procedures	A set of Procedures to operationalise the Traceability Policy should be developed and implemented within Products in light of Product Definitions, the Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure the Product Traceability of Products.
5.10.3.	Review of the Product Traceability Policy	The Product Traceability should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Product Traceability Policy is kept up-to-date.
5.10.4.	Review of Product Traceability Procedures	Product Product Traceability should be reviewed periodically, or if significant changes occur, by the Product Team to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Product Traceability Procedures are kept up-to-date.

5.11 Product Decision-Making

Objective
To ensure that Product decision-making is done in a clear, informed, unbiased and collaborative manner with a diversity of Organisation opinions, when relevant.

		Control:	**Aim:**
5.11.1.	Product Decision-Making Policy	A Policy which promotes Product decision-making clarity in - (a) Product Definitions and Product design, development, and implementation; (b) data processing; (c) Model design, development, training, and output; and (d) consideration for the Product Risk Classification Portfolio ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure Product decisions - (a) are based on all available information, inclusive of those derived from Policies and Procedures of this document; (b) follow from and are aligned with the Product Lifecycle and Workflow Description; and (c) are made with reasonable care to avoid cognitive bias.

5.11.2.	Product Decision-Making Procedures	A set of Procedures to operationalise the Decision-Making Policy within Products should be developed and implemented, inclusive of consultations with Business Stakeholders.	To ensure clear, informed, unbiased and collaborative decision-making in Products.
5.11.3.	Product Decision-Making Diversity	A diversity of Organisation stakeholder and Business Stakeholder opinions and input should be obtained, considered and, when relevant, weighed when making material Product decisions	To ensure a diversity of opinions when making material Product decisions.
5.11.4.	Product Decision-Making Documentation	Product decisions should be documented, indexed, stored and, when relevant, reviewed.	To ensure that Product decisions are documented and indexed to warrant their effective management and oversight.

5.12 Product Capabilities

Objective
To ensure that Products have sufficient capacity and capabilities to meet Product Definitions.

		Control:	**Aim:**
5.12.1.	Financial Resource Allocation	Sufficient financial resources ought to be allocated to Products based on their Product Definitions, Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure that Products have sufficient financial resources to allow for their success.
5.12.2.	Human Resource Allocation	Sufficient human resources ought to be allocated to Products based on their Product Definitions, Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure that Products have sufficient human resources to allow for their success.
5.12.3.	Assets Allocation	Sufficient Assets ought to be allocated to Products based on their Product Definitions, Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure that Products have sufficient Assets to allow for their success.
5.12.4.	Software Allocation	Sufficient Software ought to be allocated to Products based on their Product Definitions, Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure that Products have sufficient Software to allow for their success.
5.12.5.	Knowledge & Development	Product Teams should receive sufficient training and development based on the Product Definitions, Product Risk Classification Portfolio, and the Product Lifecycle and Workflow Descriptions.	To ensure that Product Teams have sufficient training and development to allow for their success.

5.12.6.	Review of Product Capabilities	Product resource allocation ought to be periodically reviewed, or if significant changes occur, by Data Science Managers, in consultation with Product Owners, to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Products resources are sufficiently maintained.

5.13 Product Record

Objective
To promote the documentation and recording of Product, Product Team and employees tasks, deliverables and progress.

		Control:	**Aim:**
5.13.1.	Product Record	A clear and detailed Product record should be continually kept of Product design, development, implementation, deliverables, progress and employee tasks.	To ensure that a clear Product record is kept to warrant effective oversight, management and accountability.
5.13.2.	Employee and Product Team Documentation	Employee and Product Team processes ought to promote the documentation of Product tasks, discussions and deliverables when relevant and as much as is reasonably practical.	To ensure that sufficient documentation is kept to warrant effective oversight, management and accountability.
5.13.3.	Log of User Access	A formal log of user access rights to Products should be maintained and reviewed at regular intervals by Product Owners.	To ensure the management, integrity and review of user access.
5.13.4.	Event Logs	Event logs of Product user activities, exceptions, and faults should be produced, kept and regularly reviewed by Product Owners.	To formally index and manage user activities to maintain Product oversight and integrity.

Section 6. Product Validation

Objective

To autonomously and impartially validate Products, Models and their outputs.

		Control:	Aim:
6.1.	Validation Department	The Organisation ought to have a department that is independent of Data Science Managers and Product Teams who validate Products.	To validate Product compliance, ethics, and performance.
6.2.	Validation Policy	A Policy detailing the responsibilities of the Validation Department and the requirements for Products to be Validated ought to be derived by the Managerial Committee.	To ensure the validity of Organisation Machine Learning.
6.3.	Validation Procedures	The Validation Department should develop and implement a set of Procedures to operationalise the Validation Policy within the Organisation.	To validate Product compliance, Ethics, and performance within the Organisation.
6.4.	Review of the Validation Policy	The Validation Policy should be reviewed periodically, or if significant changes occur, by the Managerial Committee to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Validation Policy is kept up-to-date.
6.5.	Review of Product Validation Procedures	Product Validation Procedures should be reviewed periodically, or if significant changes occur, by the Validation Department to ensure their continued effectiveness, suitability, and accuracy.	To ensure that Product Validation Procedures are kept up-to-date.

Part C
RESOURCE MANAGEMENT

Section 7. Human Resources Management

Objective

To ensure that Product employees and, when relevant, contractors are suitably identified, qualified and trained for their responsibilities and roles.

		Control:	**Aim:**
7.1.	Index of Product Employees	Product employees and, when relevant, contractors should be identified and an inventory composed and maintained.	To ensure that Product employees can easily be identified to warrant their effective oversight and management.
7.2.	Human Resources Procedures	Procedures ought to be implemented to ensure that the human resources demands of Products are met in accordance with Organisation policies and the law.	To ensure that Product human resources demands are adequately met.
7.3.	Human Resources Training	Product employees and, when relevant, contractors ought to receive regular training, including, inter alia, on industry best practices, state of the art, and ethical practices.	To ensure that employees and, when relevant, contractors receive appropriate training.

Section 8. Asset Management

Objective

To ensure the appropriate utilisation, maintenance, and, when relevant, termination of Product Assets.

		Control:	**Aim:**
8.1.	Inventory of Assets	Product Assets should be identified and an inventory of these Assets composed and maintained.	To ensure that Product Assets are known to warrant their effective oversight and management.
8.2.	Assets Roles and Responsibilities	Product Assets should have clear employee roles and responsibilities associated with their use, maintenance and security.	To ensure that a clear chain of employee roles and responsibilities are associated with Product Assets.
8.3.	Acceptable Usage of Assets	Product Assets should have clear guidelines for their acceptable usage.	To ensure that Product Assets are used in terms of best practices.
8.4.	Maintenance & Security of Assets	Product Assets should be maintained and secured in terms of industry best practices.	To ensure that Product Assets are maintained in terms of best practices.
8.5.	Redundancy of Assets	Product Assets should be made redundant in terms of business needs and industry best practices. Redundant Assets must be appropriately decommissioned and all Product data permanently deleted.	To ensure that Product Assets are decommissioned in a manner that eliminates organisation risk.

Section 9. Asset Management

Objective

To ensure the integrity of Product Software and, when relevant, its termination.

		Control:	**Aim:**
9.1.	Inventory of Software	Product Software should be identified and an inventory of these programmes composed and maintained.	To ensure that Product Software is known to warrant its effective oversight and management.
9.2.	Installation of Software	Procedures should be implemented to control and regulate the installation of Product Software.	To ensure that Product Software is installed in terms of best practices.
9.3.	Updating of Software	Product Software should be regularly updated as and when applicable.	To ensure that Product Software is kept up-to-date.
9.4.	Redundancy of Software	Product Software should be made redundant in terms of business needs and industry best practices. Redundant Software must be appropriately decommissioned and deleted.	To ensure that Product Software is decommissioned in a manner that eliminates organisation risk.

Part D
INCIDENT MANAGEMENT

Section 10. Incident Management

Objective

To warrant an effective and standardised approach to Incidents.

		Control:	**Aim:**
10.1.	Incident Policy	A Policy, which promotes the standardisation, quick, effective and orderly response to Incidents, ought to be derived by Data Science Managers and approved by the Managerial Committee.	To ensure the standardisation, quick, effective and orderly response to Incidents.
10.2.	Product Incident Procedures	Products should derive, develop and implement a set of Procedures to operationalise the Incident Policy within them.	To ensure the standardisation, quick, effective and orderly response to Incidents within Products.
10.3.	Reporting Incidents	Incidents should be reported through Organisation channels to Product Owners, Data Science Managers, and the Management Committee as timeously, effectively and efficiently as reasonably as is practical.	To ensure the Incidents are reported quickly, effectively and orderly.
10.4.	Assessment of and Decisions on Incidents	Incidents should be appropriately assessed on reporting and decisions regarding responses thereto must be made as timeously, efficiently and effectively as reasonably as is practical.	To ensure the Incidents response decisions are made quickly, effectively and orderly.
10.5.	Response to Incidents	Responses to Incidents should take place in accordance with Product Incident Procedures.	To ensure that Incidents are responded to in terms of organisation best practices and guidelines.
10.6.	Learning from Incidents	Information related to Incidents should be documented and knowledge gained therefrom must be analysed and studied to improve future Incident responses.	To ensure that Incidents are properly learnt from.

Part E
ETHICS, PUBLIC INTEREST AND LEGAL

Section 11. Third Party Contracts Management

Objective

To ensure the integrity and implementation of Policies and Procedures in third-party contracts.

		Control:	**Aim:**
11.1.	Policies and Procedures for Third-Party Contracts	Procedures ought to be designed and implemented to ensure that Policies and Procedures are legally enforceable in relevant third-party contracts.	To ensure that Policies and Procedures are implemented by third-party contractors.
11.2.	Compliance in Third-Party Contracts	Procedures should be implemented to ensure that Policies and Procedures are complied with to agreed-upon standards in relevant third-party contracts.	To ensure that Policies and Procedures are complied with by third-party contractors.
11.3.	Monitoring, Review and Auditing of Third-Party Contracts	The Organisation should regularly monitor, review and audit third party contracts to warrant third-party compliance with Policies and Procedures.	To ensure effective oversight of third-party contractors.

Section 12. Ethics & Transparency Management

Objective

To ensure that Products are transparent and ethical.

		Control:	Aim:
12.1.	Ethics Policy	An ethics policy, which promotes Ethical Practices in Machine Learning, ought to be derived by Data Science Managers and approved by the Management Committee and Ethics Committee. The Ethics Policy must be communicated to the Public.	To ensure that Machine Learning is designed, developed and implemented in accordance with the Ethical Practices.
12.2.	Review of the Ethics Policy	The Ethics Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Ethics Policy is kept up-to-date.
12.3.	Transparency Policy	A Public Interest and Transparency Policy, which promotes Public engagement, regulator engagement, and Transparency in Machine Learning, ought to be derived by Data Science Managers and approved by the Management Committee and Ethics Committee. The Transparency Policy must be communicated to the Public.	To ensure that Machine Learning is made transparent to the Public and is designed, developed and implemented in accordance with the Public Interest.
12.4.	Review of the Transparency Policy	The Transparency Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Transparency Policy is kept up-to-date.
12.5.	Speaking-Out Policy	A policy, which promotes Product Teams and/ or Product Teams members to speak-out against unethical practices, ought to be derived by Data Science Managers and approved by the Management Committee and Ethics Committee.	To ensure that Product Teams and/or Product Teams members have a safe space to voice their concerns about Machine Learning and/or Products practices and/or decisions.
12.6.	Review of the Speaking-Out Policy	The Speaking-Out Policy should be reviewed periodically, or if significant changes occur, by Data Science Managers to ensure its continued effectiveness, suitability, and accuracy.	To ensure that the Speaking-Out Policy is kept up-to-date.
12.7.	Contact with Authorities	Appropriate contact with relevant sector authorities regarding Products, and their implementation, should be maintained. Products and Product Teams ought to work in close collaboration with relevant sector authorities in a collaborative and bona fide manner.	To ensure awareness and oversight of Products by authorities.

Section 13. Compliance, Auditing & Legal Management and Oversight

Objective

To ensure that Policies and Procedures are designed, developed and implemented in accordance with the law, industry best practices, contractual obligations, and/or regulatory Guidelines.

		Control:	**Aim:**
13.1.	Identification of Laws, Regulations and Contracts	Relevant laws, regulations and contracts concerning Machine Learning ought to be identified and documented.	To ensure that relevant Machine Learning laws, regulations and contracts have been identified and documented.
13.2.	Response to Laws, Regulations and Contracts	Procedures should be implemented to incorporate relevant laws, regulations and contracts into Policies and Procedures.	To ensure that relevant Machine Learning laws, regulations and contracts are implemented and abided by.
13.3.	Privacy and Protection of Personally Identifiable Information Procedures	Procedures should be implemented to ensure the privacy and protection of personally identifiable information in Products as required in law, regulations and/or contracts.	To ensure that relevant data protection and privacy laws, regulations and contracts are implemented and abided by.
13.4.	Intellectual Property Rights Procedures	Procedures should be implemented to protect intellectual property rights and the use of proprietary products in Products as required in law, regulations and/or contracts.	To ensure that relevant intellectual property rights laws, regulations and contracts are implemented and abided by.
13.5.	Internal Audit of Policies and Procedures	Defined organisational employees should audit the implementation of Policies and Procedures within the Organisation.	To ensure the quality and integrity of implemented Policies and Procedures.