

The Open Group Certification for People

FAIR Conformance Requirements

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The Open Group Certification for People: FAIR Conformance Requirements

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1. Background

1.1 Introduction

The Open Group Certification for People: Factor Analysis of Information Risk (FAIR) Certification Program (the Program) is intended to make certification available to people who have knowledge and understanding of the Open FAIR Body of Knowledge.

This document – The Open Group Certification for People: FAIR Conformance Requirements – is an integral part of the Program. Defined terms herein are in addition to definitions provided in The Open Group Certification for People: FAIR Program Configuration document.

The Program is not intended to validate the ability of Candidates to use the Open FAIR Body of Knowledge effectively in practice, nor to determine whether Candidates are competent risk analysts.

The Program is intended to evolve, without major change to this policy, to address subsequent versions of documents in the Open FAIR Body of Knowledge that The Open Group may publish from time to time. In addition to the Level 1 (Open FAIR Foundation) certification outlined here, the Program is expected to be extended over time to include Level 2 (Open FAIR Certified) certification.

The Program is designed with the following attributes:

Openness	The Program is open to applicants from all countries, although materials and examinations will initially be available only in English.
Fairness	Certification is achieved only by passing an examination that is the same as that taken by any other Candidate. Candidates may choose whatever training or self-study they believe matches their needs in preparation for certification.
Market Relevance	The Program is structured to meet the perceived needs of the market for conversion from prior FAIR certifications performed by CXOWARE or Risk Management Insights, as well as for people without prior FAIR certification, and for certification at multiple levels (initially one). Additional levels may be introduced during the life of the Program, as may updates to the Open FAIR Body of Knowledge to include new documents or updated versions of any of the documents that compose the Open FAIR Body of Knowledge.
Learning Support	Training courses are provided by third parties, according to the needs of the market.
Quality	Training course providers may choose to seek accreditation from The Open Group for their courses. Accredited courses are listed on The Open Group website. Only accredited courses may use The Open Group logo and include the Open FAIR examination within the course, if allowed by the Program, as indicated in the FAIR Program Configuration document.

- Best Practice The Program is designed to comply with ISO/IEC 17024:2003.¹ The IAF Guidance Document for ISO/IEC 17024:2003² has also been used to assist in the development of the Program.
- Community The FAIR Support Community on LinkedIn is an online community that provides support and resources to both practicing and aspiring risk analysts, as well as for those seeking Open FAIR certification.

Open FAIR certification may be achieved directly through The Open Group, by passing an Open FAIR examination. These examinations are available in test centers operated worldwide by The Open Group Examination Providers. In preparing for these examinations, applicants are free to acquire their knowledge of FAIR, the Risk Analysis Standard, and the Risk Taxonomy Standard by self-study or by attending a training course of their choice.

Accredited Training Course (ATC) Providers refer their students to a test center operated by The Open Group Examination Providers.

For those individuals who have previously passed the FAIR certification offered by CXOWARE or Risk Management Insights, these individuals may be grandfathered into The Open Group Open FAIR certification upon passing the Open FAIR examination, and paying a nominal test fee. Please refer to The Open Group Certification for People: FAIR Certification Policy document for details.

The Conformance Requirements for Open FAIR certification apply equally to both routes to certification.

1.2 Levels of Certification

The Program currently recognizes one level of certification (Level 1: Open FAIR Foundation).

Purpose	Target Audience
<p>The purpose of certification to Level 1 is to provide validation that the Candidate has gained knowledge of the fundamentals of the Open FAIR Body of Knowledge, including knowledge of the terminology, structure, and basic concepts of the Open FAIR Body of Knowledge, and understanding of the core principles of risk analysis using FAIR, the Risk Analysis Standard, and the Risk Taxonomy Standard sufficient to be able to contribute to a risk analysis project.</p> <p>The learning objectives at this level focus on knowledge and comprehension.</p>	<p>The target audience for Level 1 includes, but is not limited to:</p> <ul style="list-style-type: none"> • Individuals who require a basic understanding of FAIR, the Risk Analysis Standard, and the Risk Taxonomy Standard • Professionals who are working in roles associated with a risk analysis project, such as those responsible for planning, execution, development, delivery, and operation • Risk analysts who are looking for a first introduction to FAIR, the Risk Analysis Standard, and the Risk Taxonomy Standard • Risk analysts who want to achieve Level 2: Open FAIR Certified (Advanced) certification (when offered) in a stepwise approach

¹ ISO/IEC 17024:2003: Conformity Assessment – General Requirements for Bodies Operating Certification of Persons (superseded by ISO/IEC 17024:2012).

² Guidance on the Application of ISO/IEC 17024:2003 (IAF GD 24 2004), published by the International Accreditation Forum, Inc. (www.iaf.nu). This document provides guidance to certification bodies seeking accreditation to ISO/IEC 17024:2003, and enables accreditation bodies to harmonize their application of the standards against which they assess certification bodies.

1.3 Migration

The Open Group FAIR Certification Program is a successor to FAIR certifications previously carried out by CXOWARE and Risk Management Insights.

The Program is available to new Candidates and to people already certified as FAIR Basic Risk Analysts by CXOWARE or Risk Management Insights.

Individuals who have previously passed the FAIR certification offered by CXOWARE or Risk Management Insights and are currently certified may obtain Open FAIR certification by taking the Open FAIR examination at a reduced cost, and passing. Please refer to The Open Group Certification for People: FAIR Certification Policy document for details.

1.4 Program Logo

Those certified within the Program are able to use The Open Group Certification Mark logo on their business cards, in proposals, in marketing materials, etc. In accordance with the Trademark License Agreement (TMLA) and Trademark Usage Guide, the logo requires the use of a label (tag line) indicating the level of certification achieved.

The label for Level 1 is as follows:

Level	Label
1	Open FAIR Foundation

1.5 Terminology and Definitions

This table defines terms or clarifies the meaning of words used within this document. Where an acronym is also used, it is provided in parentheses.

Accredited Training Course (ATC)	A training course, operated by a third party, that has successfully completed the accreditation process and which is listed in the register of ATCs on the Certification Authority's website.
Candidate	A person seeking Open FAIR certification.
Certification Authority (CA)	The organization that manages the day-to-day operations of the Program in accordance with the policies defined in the FAIR Certification Policy document. The Open Group is the Certification Authority for the Program.
Certification Directory	The official list of all Certified Persons, which is maintained by the Certification Authority and made publicly available on the Certification Authority's website.
Certification Record	The information identifying the Candidate, including contact details, and describing the way in which the Candidate meets the Conformance Requirements, including the Candidate's level of certification. The Certification Record of a Certified Person is made available by the Certification Authority at the discretion of the Certified Person.

Certification System Deficiency (CSD)	An agreed error in the Certification System that is inhibiting the certification process. A Certification System Deficiency is one possible outcome of a Problem Report.
Certified Person	A Candidate who has successfully completed the certification process, accepted the Trademark License Agreement (TMLA), and who has been notified in writing by the Certification Authority that the certification requirements have been met.
Examination Provider	The organization(s) contracted by The Open Group to provide and administer the Open FAIR examinations.
Interpretation (INT)	Decision made by the Specification Authority that elaborates or refines the meaning of the Conformance Requirements, Certification Policy, Accreditation Requirements, Accreditation Policy, or a standard or best practice referenced therein. An Interpretation is one possible outcome of a Problem Report.
Key Learning Point (KLP)	A self-contained learning object, typically ranging from 2 to 15 minutes. The Open FAIR Body of Knowledge is defined as a set of Key Learning Points (KLPs) on a section-by-section basis.
Learning Outcome	What the Candidate should know, understand, or be able to do on completion of one or more Learning Units.
Learning Unit	A related set of Key Learning Points (KLPs) derived from the Open FAIR Body of Knowledge. It is expected that a Learning Unit would equate to between 30 and 90 minutes of taught learning equivalence.
Open FAIR Body of Knowledge	A series of publications describing FAIR concepts, terms, and taxonomy. These publications are defined in the current The Open Group Certification for People: FAIR Program Configuration document.
Problem Report (PR)	A question of clarification, intent, or correctness of an accreditation or certification document, or the web-based Certification System.
Program Logo	The logo or other trademarks as designated from time to time by The Open Group for use within the Program in relation to Certified Persons in accordance with the terms of the Trademark License Agreement (TMLA).
Specification Authority (SA)	The Open Group Security Forum, or its successor, which is responsible for developing, maintaining, and interpreting the Certification Policy, Conformance Requirements, Accreditation Policy, and Accreditation Requirements of the Program.
Trademark License Agreement (TMLA)	The agreement between the Certified Person and The Open Group that contains the legal commitment by the Candidate to the terms and conditions of the Program and for use of the Program Logo.

2. Conformance Terminology

The Conformance Requirements by certification level are specified as sets of Learning Units. To achieve certification for a given level, Candidates must complete the applicable Learning Units and successfully pass the corresponding Indicator of Compliance (see Section 4).

The definition of the Learning Units does not dictate the structure, order, or time duration that topics should be taught in an Open FAIR Accredited Training Course (ATC). Training organizations are free to structure their courses as they see fit, so long as Candidates have the mandatory Learning Outcomes at the end of a course for the target certification level.

2.1 Learning Unit Format

Each Learning Unit is defined in a table organized as follows:

Unit Name: A descriptive name for the Learning Unit.

Purpose: A succinct statement of the purpose of the Learning Unit, including a high-level learning outcome.

Candidate Learning Outcome Statement: A statement of what the Candidate is expected to have learned by completing the Learning Unit. A specific term is used to define the depth of learning, from low to high as follows:

- Identify – name one or more items.
- List – name multiple items.
- Understand – demonstrate an understanding of the concept or item through selection of the best choice from a list of possible choices.
- Define – provide a definition of a term.
- Demonstrate – describe and explain a concept or term.
- Describe/State – provide a description of or statement for a concept or item; give a factual statement.
- Explain – provide a description with a rationale.
- Discuss – the ability to write logically about a topic.
- Justify – demonstrate the correctness of an assertion through a written discussion.

3. Level 1 Conformance Requirements

To achieve certification to Level 1 (Open FAIR Foundation), Candidates must complete all Learning Units defined in Section 3.1 and successfully pass the corresponding Indicator of Compliance for Level 1 certification (see Section 4).

3.1 Level 1 Syllabus

3.1.1 Basic Risk Concepts

UNIT 1	Basic Risk Concepts
Purpose	The purpose of this Learning Unit is to introduce the basic concepts of risk analysis.
Learning Outcome	1.1: Basic Risk Concepts 1.1.1: Probability <i>versus</i> Possibility <ul style="list-style-type: none"> • Candidates will be able to describe the difference between probability and possibility. • Candidates will be able to define phrases as statements of probability or possibility. 1.1.2: Prediction <ul style="list-style-type: none"> • Candidates will be able to identify that risk analyses are not reliable predictions of future events. 1.1.3: Risk Management “Stack” <ul style="list-style-type: none"> • Candidates will be able to identify and order the elements within the risk management stack.

3.1.2 Terminology

UNIT 2	Terminology
Purpose	The purpose of this Learning Unit is to help the Candidate demonstrate an understanding of all aspects of risk terminology, including both Taxonomy and Terms.
Learning Outcome	2.1: Taxonomy 2.1.1: Risk <ul style="list-style-type: none"> • Candidates will be able to define risk. • Candidates will be able to identify the elements within the FAIR Risk Taxonomy. 2.1.2: Loss Event Frequency (LEF) <ul style="list-style-type: none"> • Candidates will be able to define LEF. • Candidates will be able to describe the difference between LEF and TEF, and identify examples of each. • Candidates will be able to identify the factors that drive LEF. • Candidates will be able to identify the data type used for LEF. 2.1.3: Threat Event Frequency (TEF) <ul style="list-style-type: none"> • Candidates will be able to define TEF. • Candidates will be able to identify the factors that drive TEF. • Candidates will be able to demonstrate an example of malicious TEF. • Candidates will be able to demonstrate an example of non-malicious TEF. • Candidates will be able to identify the data type used for TEF.

UNIT 2	Terminology
	<p>2.1.4: Contact Frequency</p> <ul style="list-style-type: none"> • Candidates will be able to define contact frequency. • Candidates will be able to demonstrate an understanding of an example of contact frequency. • Candidates will be able to identify the data type used for contact frequency. <p>2.1.5: Random Contact</p> <ul style="list-style-type: none"> • Candidates will be able to define random contact. • Candidates will be able to describe examples of random contact. • Candidates will be able to identify factors that affect the frequency of random contact. <p>2.1.6: Regular Contact</p> <ul style="list-style-type: none"> • Candidates will be able to define regular contact. • Candidates will be able to describe examples of regular contact. <p>2.1.7: Intentional Contact</p> <ul style="list-style-type: none"> • Candidates will be able to define intentional contact. • Candidates will be able to identify an example of intentional contact. <p>2.1.8: Probability of Action (PoA)</p> <ul style="list-style-type: none"> • Candidates will be able to define PoA. • Candidates will be able to identify the three factors that affect PoA. • Candidates will be able to identify the data type used for PoA (%). <p>2.1.9: Value</p> <ul style="list-style-type: none"> • Candidates will be able to demonstrate an understanding of an example of how perceived value drives PoA. • Candidates will be able to demonstrate an understanding of an example of how changes in perceived value may affect PoA. <p>2.1.10: Level of Effort (LoE)</p> <ul style="list-style-type: none"> • Candidates will be able to identify how perceived LoE affects PoA. • Candidates will be able to identify how perceived LoE may affect PoA. <p>2.1.11: Risk</p> <ul style="list-style-type: none"> • Candidates will be able to describe how perceived risk may affect PoA. • Candidates will be able to describe how changes in perceived risk may affect PoA. <p>2.1.12: Vulnerability (Vuln)</p> <ul style="list-style-type: none"> • Candidates will be able to define Vuln. • Candidates will be able to identify the factors that determine Vuln. <p>2.1.13: Threat Capability (TCap)</p> <ul style="list-style-type: none"> • Candidates will be able to define TCap. • Candidates will be able to identify the factors that drive TCap. • Candidates will be able to describe TCap in the context of a malicious scenario, as well as a human error scenario. • Candidates will be able to identify the data type for TCap (%). <p>2.1.14: Skills</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of how threat agent skills can be affected (e.g., by using an obscure technology). <p>2.1.15: Resources</p> <ul style="list-style-type: none"> • Candidates will be able to identify the two factors that make up resources. • Candidates will be able to describe how affecting time and/or material can affect Vuln.

UNIT 2	Terminology
	<p>2.1.16: Resistance Strength (RS)</p> <ul style="list-style-type: none"> • Candidates will be able to define RS (in a malicious or natural context) and difficulty (in a human error scenario). • Candidates will be able to identify the data type for RS (%). <p>2.1.17: Loss Magnitude (LM)</p> <ul style="list-style-type: none"> • Candidates will be able to define LM. • Candidates will be able to identify and describe the two categories of loss (primary and secondary). <p>2.1.18: Primary Loss</p> <ul style="list-style-type: none"> • Candidates will be able to define primary loss. • Candidates will be able to describe examples of primary loss. • Candidates will be able to identify which forms of loss are most common for primary loss. <p>2.1.19: Secondary Loss</p> <ul style="list-style-type: none"> • Candidates will be able to define secondary loss. • Candidates will be able to describe an example of secondary loss. <p>2.1.20: Secondary Loss Event Frequency (SLEF)</p> <ul style="list-style-type: none"> • Candidates will be able to define SLEF. • Candidates will be able to identify the data type for SLEF (%). <p>2.1.21: Secondary Loss Magnitude (SLM)</p> <ul style="list-style-type: none"> • Candidates will be able to define SLM. • Candidates will be able to identify which forms of loss are most common for secondary loss. <p>2.2: Terms</p> <p>2.2.1: Asset</p> <ul style="list-style-type: none"> • Candidates will be able to define asset. • Candidates will be able to describe examples of assets. <p>2.2.2: Threat</p> <ul style="list-style-type: none"> • Candidates will be able to define threat. • Candidates will be able to describe examples of threats. <p>2.2.3: Threat Communities</p> <ul style="list-style-type: none"> • Candidates will be able to define threat community. • Candidates will be able to describe examples of threat communities. <p>2.2.4: Threat Profiling</p> <ul style="list-style-type: none"> • Candidates will be able to define threat profiling. • Candidates will be able to describe examples of threat profile elements. • Candidates will be able to describe the importance/value of threat profiles. <p>2.2.5: Secondary Stakeholders</p> <ul style="list-style-type: none"> • Candidates will be able to define secondary stakeholders. • Candidates will be able to describe examples of secondary stakeholders. <p>2.2.6: Threat Event</p> <ul style="list-style-type: none"> • Candidates will be able to define threat event. • Candidates will be able to describe an example of a malicious threat event. • Candidates will be able to describe an example of a non-malicious threat event. • Candidates will be able to explain the difference between threat events and loss events. <p>2.2.7: Loss Event</p>

UNIT 2	Terminology
	<ul style="list-style-type: none"> • Candidates will be able to define loss event. • Candidates will be able to describe an example of a loss event. <p>2.2.8: Primary Stakeholder</p> <ul style="list-style-type: none"> • Candidates will be able to define primary stakeholder. • Candidates will be able to describe an example of a primary stakeholder. <p>2.2.9: Loss Flow</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of loss flow. <p>2.2.10: Forms of Loss</p> <ul style="list-style-type: none"> • Candidates will be able to identify the six forms of loss. <p>2.2.11: Productivity</p> <ul style="list-style-type: none"> • Candidates will be able to identify the two types of productivity loss (reduced revenue, unproductive employee time). <p>2.2.12: Revenue</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of revenue loss. • Candidates will be able to describe the difference between lost revenue and delayed revenue. • Candidates will be able to identify sources of reliable data regarding lost revenue. <p>2.2.13: Employee Productivity</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of resource utilization loss. • Candidates will be able to identify sources of data related to the cost of employee time. <p>2.2.14: Response</p> <ul style="list-style-type: none"> • Candidates will be able to define response loss. • Candidates will be able to identify examples of response loss. • Candidates will be able to identify sources of data for response costs. <p>2.2.15: Replacement</p> <ul style="list-style-type: none"> • Candidates will be able to define replacement cost. • Candidates will be able to describe examples of replacement costs. <p>2.2.16: Competitive Advantage</p> <ul style="list-style-type: none"> • Candidates will be able to define competitive advantage loss. • Candidates will be able to describe an example of competitive advantage loss. • Candidates will be able to identify potentially reliable sources of competitive advantage loss data within an organization. <p>2.2.17: Fine and Judgment (F&J)</p> <ul style="list-style-type: none"> • Candidates will be able to define F&J loss. • Candidates will be able to describe an example of F&J loss. • Candidates will be able to identify potentially reliable sources of F&J data. <p>2.2.18: Reputation</p> <ul style="list-style-type: none"> • Candidates will be able to describe reputation damage. • Candidates will be able to describe examples of reputation damage. • Candidates will be able to identify potential sources of reliable reputation damage data within an organization. <p>2.2.19: Controls</p> <ul style="list-style-type: none"> • Candidates will be able to define control. <p>2.2.20: Avoidance</p> <ul style="list-style-type: none"> • Candidates will be able to describe examples of controls that reduce the potential for contact with threat agents.

UNIT 2	Terminology
	2.2.21: Deterrence <ul style="list-style-type: none"> • Candidates will be able to describe examples of deterrent controls. 2.2.22: Resistance <ul style="list-style-type: none"> • Candidates will be able to describe examples of resistive controls. 2.2.23: Responsive <ul style="list-style-type: none"> • Candidates will be able to describe examples of responsive controls.

3.1.3 Results

UNIT 3	Results
Purpose	The purpose of this Learning Unit is to help the Candidate demonstrate an understanding of the various aspects of developing and interpreting FAIR risk analysis results.
Learning Outcome	3.1: Interpreting Results <ul style="list-style-type: none"> • Candidates will be able to describe frequency and magnitude results from a FAIR analysis. 3.2: Communicating Results 3.2.1: Qualifiers <ul style="list-style-type: none"> • Candidates will be able to describe the purpose for applying qualifiers to the results of an analysis. • Candidates will be able to identify the two types of qualifiers. 3.2.2: Fragile Qualifier <ul style="list-style-type: none"> • Candidates will be able to define the fragile qualifier. • Candidates will be able to describe an example of a fragile condition. 3.2.3: Unstable Qualifier <ul style="list-style-type: none"> • Candidates will be able to define the unstable qualifier. • Candidates will be able to describe an example of an unstable condition. 3.2.4: Qualitative Translation <ul style="list-style-type: none"> • Candidates will be able to identify why translating quantitative results into qualitative values may be useful. • Candidates will demonstrate an understanding of challenges associated with defining and using qualitative scales. 3.2.5: Severity/Significance Scales <ul style="list-style-type: none"> • Candidates will be able to describe the difference between capacity for loss and subjective tolerance for loss. 3.2.6: Capacity for Loss <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of capacity for loss. 3.2.7: Subjective Tolerance for Loss <ul style="list-style-type: none"> • Candidates will be able to define subjective tolerance for loss. 3.2.8: Mapping Quantitative Results to Qualitative Scales <ul style="list-style-type: none"> • Candidates will be able to demonstrate translating quantitative values into qualitative ranges. 3.3: Business Case Development <ul style="list-style-type: none"> • Candidates will be able to describe the process of developing business cases based on risk analyses. 3.4: Complementing Other Frameworks

UNIT 3	Results
	<ul style="list-style-type: none"> • Candidates will demonstrate an understanding of how FAIR complements other security assessment frameworks (e.g., ISO).

3.1.4 Analysis Process

UNIT	Analysis Process
Purpose	The purpose of this Learning Unit is to help the Candidate demonstrate an understanding of the process of risk analysis.
Learning Outcome	<p>4.1: Assumptions</p> <ul style="list-style-type: none"> • Candidates will be able to describe the role assumptions play in analyses. • Candidates will be able to identify ways of managing the effect of assumptions in analyses. <p>4.2: Scoping/Definition</p> <ul style="list-style-type: none"> • Candidates will be able to describe why scenario scoping and definition is important. • Candidates will be able to describe examples of how an inadequately scoped analysis may become challenging. <p>4.2.1: Loss Event Definition</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of why a clear loss event definition is critical. • Candidates will be able to describe an example of a loss event. <p>4.2.2: Identifying Relevant Threat Communities</p> <ul style="list-style-type: none"> • Candidates will be able to define threat community. <p>4.2.3: Threat Profiling</p> <ul style="list-style-type: none"> • Candidates will be able to define threat profiling. • Candidates will be able to identify advantages to performing threat profiling. • Candidates will be able to identify potential threat profile parameters. <p>4.2.4: Identifying the Asset(s)</p> <ul style="list-style-type: none"> • Candidates will be able to define asset. • Candidates will be able to describe why a clear definition of the assets at risk is critical in performing good analyses. <p>4.2.5: Identifying Event Vectors</p> <ul style="list-style-type: none"> • Candidates will be able to define threat vector. • Candidates will be able to describe why differentiating threat vectors in an analysis can be important. <p>4.2.6: Identifying Types of Threat Events</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of a malicious scenario. • Candidates will be able to describe an example of an error scenario. • Candidates will be able to describe an example of a failure scenario. • Candidates will be able to describe an example of a natural scenario. <p>4.2.7: Scenario Parsing</p> <ul style="list-style-type: none"> • Candidates will be able to identify key considerations that are important when deciding whether to combine or decompose scenarios. <p>4.3: Documenting Rationale</p> <ul style="list-style-type: none"> • Candidates will be able to describe why documenting measurement rationale is important. <p>4.3.1: Good <i>versus</i> Bad Documentation</p>

UNIT	Analysis Process
	<ul style="list-style-type: none"> • Candidates will be able to identify good <i>versus</i> bad rationale documentation. <p>4.4: Choosing Abstraction Level</p> <ul style="list-style-type: none"> • Candidates will be able to identify the reasons for choosing higher or lower levels of abstraction in analysis. <p>4.4.1: Data Quality</p> <ul style="list-style-type: none"> • Candidates will be able to identify good <i>versus</i> poor data. • Candidates will be able to identify the characteristics of good data. <p>4.4.2: Diminishing Returns</p> <ul style="list-style-type: none"> • Candidates will be able to describe the principle of diminishing returns within the context of choosing an abstraction level for analysis. <p>4.5: Finding Data</p> <ul style="list-style-type: none"> • Candidates will be able to identify potential sources of information for various risk factors. • Candidates will be able to describe the difference between good and poor sources of data. <p>4.5.1: Subjective <i>versus</i> Objective Data</p> <ul style="list-style-type: none"> • Candidates will be able to describe the difference between questions that elicit more subjective data <i>versus</i> more objective data. <p>4.6: Troubleshooting Analyses</p> <ul style="list-style-type: none"> • Candidates will be able to identify different methods for troubleshooting analyses. <p>4.6.1: Using the Taxonomy</p> <ul style="list-style-type: none"> • Candidates will be able to describe how to use the taxonomy to resolve disagreements between analyst estimates. <p>4.6.2: Multiple Outcomes</p> <ul style="list-style-type: none"> • Candidates will be able to describe how to use multiple analysis outcomes to resolve disagreements between analyst estimates. <p>4.6.3: Evaluating Assumptions</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of the role different assumptions can play in analyst estimate disagreements.

3.1.5 Measurement

UNIT 5	Measurement
Purpose	The purpose of this Learning Unit is to help the Candidate demonstrate an understanding of how risk elements can be best measured.
Learning Outcome	<p>5.1: Calibration</p> <ul style="list-style-type: none"> • Candidates will be able to describe the purpose of calibration. <p>5.1.1: Starting with the Absurd</p> <ul style="list-style-type: none"> • Candidates will be able to describe the purpose for starting with absurd estimates. • Candidates will be able to describe an example of starting with the absurd. <p>5.1.2: Decomposing the Problem</p> <ul style="list-style-type: none"> • Candidates will be able to describe the purpose for decomposing the problem within the context of making estimates. • Candidates will be able to describe an example of decomposing a problem. <p>5.1.3: Testing Confidence using the Wheel</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of the purpose for using the wheel

UNIT 5	Measurement
	<p>when making calibrated estimates.</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of using the wheel to make calibrated estimates. <p>5.1.4: 90% Confidence Overall</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of using the wheel to make calibrated estimates with 90% confidence. <p>5.1.5: 95% Confidence at Each End</p> <ul style="list-style-type: none"> • Candidates will be able to describe an example of using the wheel to make calibrated estimates with 95% confidence at either end of the range. <p>5.1.6: Challenging Assumptions</p> <ul style="list-style-type: none"> • Candidates will be able to describe the purpose for challenging assumptions when estimating. <p>5.2: Distributions</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of the advantages of using distributions when making measurements. • Candidates will be able to identify the four parameters used when making estimates in FAIR analyses. <p>5.3: Most Likely Values</p> <ul style="list-style-type: none"> • Candidates will be able to describe what the most likely value in a distribution represents. • Candidates will be able to define mode within the context of a distribution. <p>5.4: Monte Carlo</p> <ul style="list-style-type: none"> • Candidates will be able to describe how Monte Carlo works. • Candidates will be able to identify the primary advantage of using Monte Carlo. <p>5.5: Accounting for Uncertainty</p> <p>5.5.1: Range Confidence</p> <ul style="list-style-type: none"> • Candidates will be able to describe how confidence in the end-points of a range is determined. <p>5.5.2: Curve Shaping</p> <ul style="list-style-type: none"> • Candidates will be able to describe how confidence in the end-points of a range is determined. <p>5.6: Accuracy <i>versus</i> Precision</p> <ul style="list-style-type: none"> • Candidates will be able to describe the difference between accuracy and precision. • Candidates will be able to describe the primary concern regarding precision. • Candidates will be able to describe an example of an estimate that is precise but inaccurate. • Candidates will be able to describe an example of an estimate that is accurate but not precise. • Candidates will demonstrate an understanding of the concept of “useful degree of precision”. <p>5.7: Subjectivity <i>versus</i> Objectivity</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of the difference between objectivity and subjectivity. • Candidates will be able to describe an example of data that is more subjective in nature. • Candidates will be able to describe an example of data that is more objective in nature. • Candidates will demonstrate an understanding that pure objectivity is not

UNIT 5	Measurement
	<p>achievable.</p> <p>5.8: Deriving Vulnerability (Vuln)</p> <ul style="list-style-type: none"> • Candidates will be able to describe the process of deriving Vuln using TCap and RS estimates. <p>5.8.1: Threat Capability (TCap) Continuum</p> <ul style="list-style-type: none"> • Candidates will be able to define TCap continuum. <p>5.8.2: Defining a Threat Community TCap Distribution</p> <ul style="list-style-type: none"> • Candidates will be able to describe how to estimate the TCap for a threat community. • Candidates will be able to describe what the minimum, maximum, and ML points on a TCap distribution represent. <p>5.9: Ordinal Scales</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding of limitations associated with ordinal scales. <p>5.10: Diminishing Returns</p> <ul style="list-style-type: none"> • Candidates will demonstrate an understanding that more effort in gathering data is not always offset by material improvements in analysis quality.

3.1.6 The Open Group Certification for People: FAIR Certification Program

UNIT 6	The Open Group Certification for People: FAIR Certification Program
Purpose	The purpose of this Learning Unit is to help the Candidate demonstrate an understanding of The Open Group Certification for People: FAIR Certification Program.
Learning Outcome	The Candidate must be able to explain The Open Group Certification for People: FAIR Certification Program, and distinguish between the levels for certification as an advanced certification level is developed.

4. Indicators of Compliance

The Indicators of Compliance for the Program are the Open FAIR examinations. The examinations will be available only in English at the start of the Program, but examinations in other languages will follow soon afterwards, according to demand.

The descriptions of the examinations for each level are maintained by the Certification Authority and displayed on The Open Group website. This includes a description of the examination type (for example, simple multiple choice, complex scenario, etc.), the number of questions, the duration, supervision requirements, whether an examination is open book, the pass score, and the pre-requisites for taking the examination.

Candidates who are not fluent in English may request additional time when taking the examinations in English.

To meet the need for certification to be accessible for those whose command of written English is insufficient to take the examinations in English, providers of Accredited Training Courses (ATCs) delivered in other languages may offer other means of assessment, subject to approval by The Open Group on a case-by-case basis.

5. Rationale (Informative)

This section contains informative rationale.

5.1 Background

The *Background* section is derived from the FAIR Certification Policy document and provides useful background information on the Program, so this document has an element of self-containment.

5.2 Conformance Terminology

This section explains the approach taken in defining Learning Outcomes for a Candidate, and the terms used. It is explicitly stated that this approach does not mandate the structure, order, or duration of taught modules in an Open FAIR Accredited Training Course (ATC). Trainers are free to structure courses as they see fit. It is expected that accredited trainers will tailor a course to the specific audience, its experience, and needs.

5.3 Conformance Requirements

The Conformance Requirements are documented as the Learning Outcomes for a Candidate. These have been organized into a set of Learning Units for the one level of certification addressed in this document (Level 1: Open FAIR Foundation).

A Learning Unit is a related set of Learning Outcomes derived from the Risk Analysis Standard and the Risk Taxonomy Standard, and other risk management guidance published by The Open Group and comprising the Open FAIR Body of Knowledge, where a Learning Outcome is typically a 2 to 15-minute self-contained learning object. It is expected that a Learning Unit would equate to between 30 and 90 minutes of taught learning equivalence.

5.4 Indicators of Compliance

This section documents that the descriptions of the measurement of attainment to the levels can be located from The Open Group certification website.

This section also recognizes that in some markets there may be alternate Indicators of Compliance as approved by The Open Group from time to time on a case-by-case basis.