

Project Risk Management

RSK-WI-005

Applicability

ARTC Network Wide	SMS
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Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	26 May 2016	All	Development of Document
1.1	19 December 2017	Various	Removal of references to RMIS and inclusion of Central Risk Register. Clarification of wording. Update to reflect current project management practices.
1.2	19 February 2018	1.3	Change of title for document owner. Change Division/ Business Unit.
1.3	23 November 2018	Various	Incorporation of references to ARTC's new Enterprise Risk Management System and terminology changes arising from the system implementation. Inclusion of revised risk matrix.
1.4	05 April 2019	Various	Replacement of term "Strategic Risk" with "Top Risk Event", and removal of references to Project Risk Profile and project risk impact categories.

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1.5	1 June 2020	6	Clarification that no requirement for assessment of Inherent Risk level for project risks
2.0	29 February2023	ALL	Creation of document to replace Project Risk Management Procedure

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1 INTRODUCTION

1.1 Scope & Purpose

This Work Instruction provides further detail on ARTC's risk assessment process and provides guidance to users on how to practically apply risk management principles in project delivery settings. This document provides general guidelines but is not intended to be exhaustive or prescriptive. Users seeking to manage risks are encouraged to apply appropriate judgement to their specific risk management activity and consult the Corporate Risk Team if they require further assistance.

The emphasis of this work instruction tends toward more complex, high value capital projects as opposed to routine construction works that may be carried out under an Annual Works Program. Examples may include:

- Significant civil works, such as tunnel construction, bridge construction
- Technical operational changes, such as the introduction of new signal/track infrastructure
- Safety critical system changes, such as network control system changes

The Work Instruction is to be used in accordance with RSK-PR-001 Risk Management Procedure.

1.2 Benefits

Applying the risk management discipline effectively provides ARTC with the following benefits:

- Increased awareness of risk across the organisation
- Risk informed and effective decision making
- Increased confidence of achieving organisational goals and strategic priorities
- Improved workplace safety and security for employees and contractors
- Improved operational efficiency through consistent application of risk processes and controls
- Improved resource allocation
- Identification of opportunities

2 Overview & Application

2.1 Overview

This work instruction provides guidance on how to practically undertake risk management activities across the project lifecycle.

2.2 Accountabilities & Responsibilities

All employees have responsibility for managing risks within the business. An overview of relevant accountabilities and responsibilities in respect to this work instruction is outlined below:

Project Manager – has responsibility for developing a Project Risk Management Plan which outlines the type and nature of risk assessment activity which will be undertaken across the project lifecycle. Additionally, Project Managers are accountable for implementing activities outlined in the Project Risk Management Plan such as identification, evaluation, controlling and monitoring of risks, including the delivery of any specialist risk studies.

Risk Owner – has accountability for managing risks under their ownership, including the review of the risks and effectiveness of existing controls. In addition, Risk Owners are responsible for ensuring appropriate Proposed Treatments and Actions are identified and updated.

Control Owner – has accountability for effective design, implementation, and ongoing application of a control.

Detailed responsibilities are outlined in Appendix B

2.3 Risk Management Process

This work instruction focuses on the risk assessment stage of the risk management process as outlined in figure 2 below. Risk assessment is made up of 4 stages which includes the identification, assessment, evaluation, and development of actions. Stakeholder communication and consultation is a key aspect that occurs at each stage of the process

Further detail regarding the end-to-end risk management process is outlined in RSK-PR-001 Risk Management Procedure.

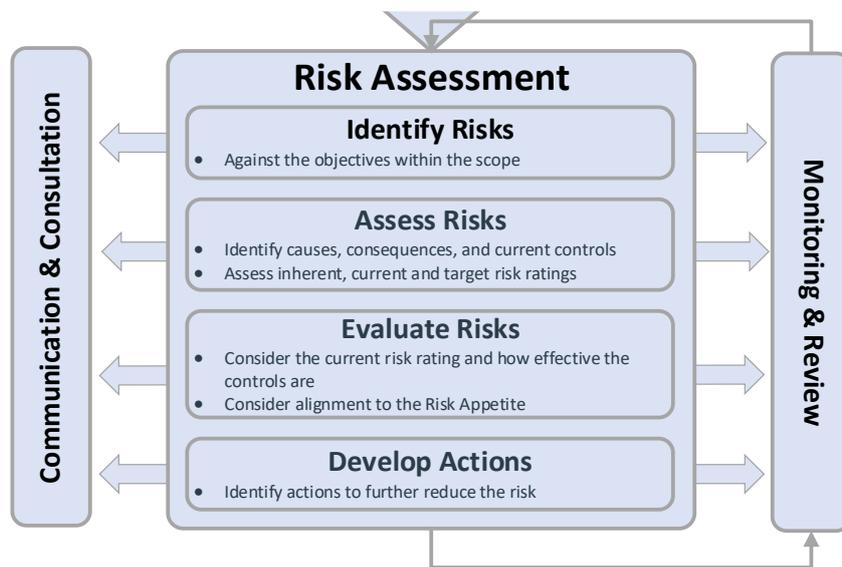


Figure 1: Risk Management Process Model

3 Project Risk Management

Project risk management activities are conducted across a project’s lifecycle to identify and control risks to the successful delivery of project objectives. Risk assessment activity will vary depending on the complexity and value of a project, but the focus here should be on complicated, bespoke projects governed by formal Stage Gates rather than on routine, repeatable projects such as those delivered under Annual Works Program. Risks associated with routine works will nominally be managed through operational risk assessments such as those outlined in the SMS or Standard Operating Procedures (SOP).

Risk management activity should commence during the project inception or planning phase to allow for early identification of project risks such as ensuring sufficient lead-time is allowed for planning approvals, track access and possessions are coordinated for delivery works, and assets are protected during construction.

The project manager will select appropriate methods and tools to identify, assess and document risk controls, but these may include qualitative risk workshops, quantitative or semi-quantitative risk analysis, or other specialist risk evaluation methods to support decision making.

Project risks should be documented in a format that is appropriate for the type and complexity of the project – this could include use of one of ARTC’s Enterprise Risk Management System. Project risks should be

reviewed regularly throughout the project lifecycle and new risk assessment activities may be required when conditions change.

Refer to the ARTC Project Management Framework and the Risk Management Manual for Major Construction Projects for further information or contact the Corporate Risk Team for guidance.

3.1 Risk Activity & Project Lifecycle

Risk management activities undertaken for a project may vary depending on the nature, scale and scope of a project. Risk management activities that would typically be expected to be undertaken are outlined below.

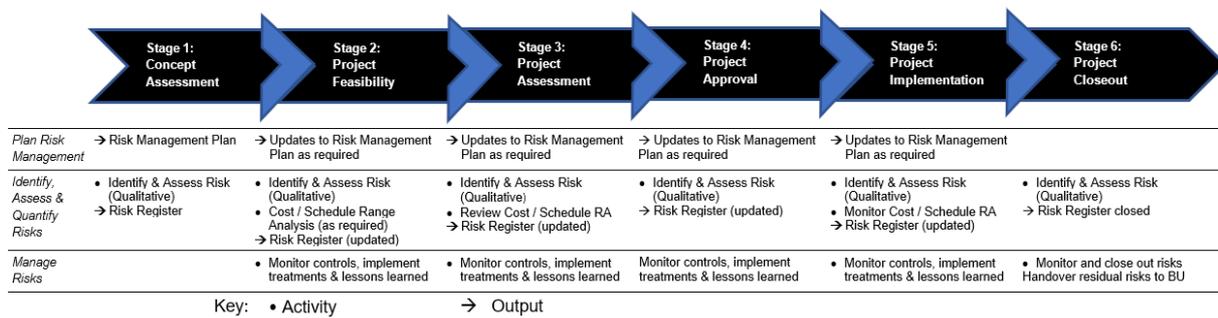


Figure 2: Project Risk Management Activities

Further detail on the qualitative and technical methods available for use in assessing risk are described later.

3.2 Plan Risk Management

The Project Manager is required to plan for the delivery of risk management activities across their project lifecycle. The risk management activities must be commensurate with the technical complexity, size and degree of risk posed to ARTC associated with delivery of the specific project and must consider risk control mechanisms provided through existing suite of project management support processes (e.g., project management framework, configuration change management process, safety management system, etc).

For simple, low risk projects, the Project Manager should incorporate general risk management activities (e.g., scheduled risk workshops) into standard Project Management Plans. The majority of works carried out under these projects would likely be conducted in accordance with established risk control systems (e.g., the safety management system).

In the case of complex or high-value projects, the Project Manager will typically develop a Project Risk Management Plan (PRMP) during the project feasibility phase. The PRMP details the approach to managing risk across the project lifecycle, including:

- Roles, responsibilities & accountabilities
- Risk management activities across project lifecycle
- Risk assessment methods (e.g., risk studies, quantitative assessment, human factors, etc)
- Resourcing including any specialist resources required
- Risk tolerances including project specific risk matrix and any tolerances for quantitative analysis
- Arrangements for reporting and escalation of risks

The Project Manager can utilise the Project Risk Management Plan template to support this process.

Where projects are being delivered under a Program of works, consideration should be given to planning for risk management activities at a program level so that a common approach to risk management is applied

across each individual project. Adopting a Program view of risk also allows for appropriate aggregation and escalation of risk to the Executive or Board to intervene as appropriate.

3.2.1 Defining Project Risk Matrix

A dedicated risk matrix can be developed for Projects to provide improved granularity around the prioritisation of risk based on project-specific budget and schedule criteria as below.

Table 1: Financial & Schedule consequence criteria by Project Category

Criteria	Consequence criteria (guideline)				
	Not Significant	Minor	Moderate	Major	Extreme
Financial	<1% of project budget	≥1% to <3% of project budget	≥3% to <5% of project budget	≥5% to <10% of project budget	≥10% of project budget
Schedule	No critical path impact	>0 to <3% of project duration	≥3% to <5% of project duration	≥5% to <10% of project duration	10% of project duration

The risk likelihood scale can also be adjusted to provide an objective interpretation of the qualitative description of the likelihood criteria outlined in ARTC’s Enterprise Risk Matrix. Attributing a defined probability band in percentage terms provides an objective basis for undertaking quantitative risk assessment or range analysis.

Table 2: Risk likelihood probability guidance

Likelihood	Qualitative Description	Probability
Almost Certain	Is expected to occur in most circumstances	≥80%
Likely	Will probably occur in most circumstances	≥60% to <80%
Possible	Might occur at some time	≥40% to <60%
Unlikely	Could occur at some time	≥20% to <40%
Rare	May occur in exceptional circumstances	<20%

Consult the Corporate Risk Team for further guidance on establishing dedicated Project risk matrices.

3.3 Applying Risk Management Methods

All Projects will require some form of risk management activity in order to deliver required project outcomes. The risk management methodology on simple projects does not fundamentally differ to that on complex projects, only that complex projects are likely to have more detailed studies required to support decision making. In essence, the Project Manager must ensure that risks are identified, assessed, evaluated and controlled to be within an acceptable risk threshold over the lifecycle of the project (refer to figure 1 & 2).

The following section provides some practical examples of the application of project risk management at ARTC. This content is not exhaustive, and personnel are encouraged to contact the Corporate Risk Team for guidance on how best to apply a risk management process for their specific project.

3.3.1 Qualitative Risk Assessment

As a minimum, qualitative risk assessments will be undertaken to generate a list of risks relevant to a specific project including the determination of current risk level and target risk level. The calculation of inherent risk (i.e., untreated risk) is optional for projects where there is no ongoing exposure beyond the life of the project.

Project risks are specific to the project being undertaken and are usually able to be closed at the completion of the project. Identifiable risks that exist only for the life of the project typically include:

- Risks related to specific activities that are being undertaken
- Risks that may impact on budget
- Risks that may impact on delivery of required objectives
- Risks that may impact on timeframes for project delivery

Risk identification methods may include risk workshops, checklists, brainstorming, review of lessons learned, stakeholder consultation, systems and scenario analysis and systems engineering techniques. It is often also appropriate to review risks identified in previous similar projects.

The risk assessment approach taken will ultimately depend on the nature of the project and discretion of the Project Manager. Contact the Corporate Risk team for further guidance.

3.3.2 Quantitative Risk Assessment

Quantitative Risk Assessment (QRA) analyses objective, measurable data sets to determine a probabilistic rating of the likelihood of a defined consequence event occurring. This will typically be focussed on addressing the probability and volume of budget or schedule exceedances, which will necessitate the specification of project-specific cost and schedule consequence criteria.

While QRA's are subject to the same uncertainties of qualitative risk assessment, they are considered more reliable on account of the methodical consideration of the variables that feed into the specified outcome.

Designing and undertaking QRA requires a degree of specialist expertise, often using independent or consulting resources, so due consideration should be given to weighing up the cost of engaging this specialist expertise versus the benefit to be gained from undertaking a QRA for any given application.

3.3.3 Specialist Project Risk Studies

Due to their technical nature, some Projects require specialist risk studies to aid decision making or for other reasons such as obtaining Regulatory accreditation for new assets or systems.

Where it has been identified that risk studies are to be completed, the Project Manager shall detail the studies in the Project Risk Management Plan. This will include:

- The type of risk studies required including scope and objectives
- The internal and external specialist expertise that will be used to complete the studies
- An overview of the methodology and any dependencies of the risk studies
- How the information arising from risk studies will be used, approved and managed

Where this information is not known at the time of preparation of the Project Risk Management Plan, references to the anticipated risk studies can be made until such a time that these details become clear.

3.4 Risk Records Management

The Project Manager shall ensure that records are maintained to demonstrate that an appropriate level of risk management activity was applied to control risks on their project. This could include stand-alone risk registers for simple projects or establishing risk registers within one of ARTC's electronic risk management systems.

When establishing record management arrangements for large or complex projects, consideration should be given to the most appropriate structuring of risk registers. In the case of Programs of work there may be multiple risk registers that describe interrelated risks which require coordination or risks / actions owned by external organisations which also require monitoring. Where this occurs the registers and interrelation between individual project risk records should be identified and documented in the PRMP.

Personnel are encouraged to contact the Corporate Risk Team for guidance on how best to structure risk records for their specific project or program.

3.5 Monitoring, Review, Escalation & Handover

Risks require ongoing monitoring and management across the project lifecycle to ensure that risk ownership and control actions are managed effectively over time.

3.5.1 Periodic Risk Review

The Project Manager is required to outline arrangement for risk reviews for the project in the PRMP. The method for risk review may vary depending on the nature, scale and timeframe of the project, but routine quarterly risk reviews would typically be considered appropriate. Where the size and complexity of project works merits, it will be appropriate to schedule more regular risk reviews including 'deep dive' evaluation via formalised committee (e.g., Inland Rail Risk & Audit Committee).

As a minimum, formal Risk Reviews should be conducted by Projects:

- Quarterly across the complete Project risk register
- Where significant changes are made to the project that may impact the project risk profile, including, but not limited to, changes in:
 - project scope, budget or schedule
 - governance, key stakeholders or community expectation
 - project activities, site conditions, process or work methods
- Investigation / review of a major incident
- Where there is a change in the effectiveness of a control
- Where a finding has been identified in an audit warranting a risk review

3.5.2 Risk Escalation

Core business risks are subject to formal escalation through the Board Risk Committee reporting process. However, project risks often lack the materiality to be captured under this process and require additional attention.

Major projects are more likely to be captured for Board Risk Committee escalation triggered under the Significant Risk Reporting protocols. Whilst this process is coordinated by the Corporate Risk Team, appropriate notification and escalation requirements for major project risks should be defined in the PRMP.

3.5.3 Risk Closeout & Transfer of Enduring Risks

The delivery of project works may introduce enduring risks to the operational business after completion. This primarily results from:

- The failure to close out all project risks at the end of a project
- Changes made to assets, systems or business processes arising from projects which introduce new risk to the operating business

Whilst many such risk impacts should be managed through the application of existing risk control processes such as configuration change management, consideration needs to be given to the handover of new risks or risk controls to the operating business.

Where new and enduring risks impacts arising from projects are identified the Project Manager is required to consult with their relevant counterpart in the operating business to ensure adequate handover of risk and control actions. This can be achieved through informal arrangements such as interface management

meetings between projects and operational teams or can be delivered through a formal handover process built into project stage gates and formal meetings with operational integration teams or adjudication bodies.

Appropriate records must be maintained to demonstrate risk handover. Personnel are encouraged to contact the Corporate Risk Team for guidance.

4 Appendix

In this section additional information is provided to assist staff with risk management, and to encourage a consistent and comprehensive language and approach to managing risk across the whole of the ARTC.

The information includes:

- Glossary of key risk management terms
- ARTC Risk Management Responsibilities and Accountabilities
- Associated documents

Other tools and resources can be found on the ARTC website under Risk Management.

4.1 Appendix A – Glossary of key risk management terms

Term	Description
Actions	Activities to be undertaken to align risk with the organisational risk appetite.
Cause	A condition or set of conditions leading to a risk. . Used in this document to describe the cause contributing to a risk.
Consequence	Outcome of an event affecting ARTC reaching its objectives in a positive or negative way. A consequence may also be referred to as an impact.
Control	A measure that modifies risk by either preventing the risk or reducing the consequences of the risk.
Current Risk Level	The risk level given the effectiveness of controls currently in place. Also referred to as the residual risk level.
Level of Risk	Inherent Risk Level – the risk level without any controls in place Current Risk Level – the risk level given the effectiveness of controls that are currently in place Target Risk Level – the risk level that is expected to remain after implementation of Proposed Treatments
Likelihood	The probability of a risk occurring.
Objectives	ARTC's organisational and project deliverables.
Program	A group of projects and/or work activities selected, planned and managed in a coordinated way to achieve a common objective.
Project	A temporary organisation that is created for the purpose of delivering one or more business products according to a specified Business Case. A project has a start and finish date.
Project Manager	For the purpose of this Work Instruction, Project Manager is used as a generic term for the person ultimately responsible for the delivery of the programme or project.
Project Risk	A risk that is specific to the project being undertaken and is usually able to be closed at the completion of the project.
Project Risk Register	A risk register that is relevant to a specific project.
Qualitative Risk Assessment	Method of risk analysis used to describe the level of risk considering scaled consequences and likelihood, utilising the ARTC Risk Matrix.
Quantitative Risk Assessment	Method of risk analysis used to numerically assess the nature, sources, and impact of a risk, and assess and quantify the overall impact of uncertainties.
Risk	The chance of something happening that will have either a negative or positive impact. The level of risk reflects the likelihood of the unwanted event and the potential consequences of the unwanted event.
Risk Assessment	The process of identifying, analysing and evaluating risk.
Risk Impact Categories	ARTC's six identified organisational areas of risk focus; SAFERR. This is made up of the following categories; Safety, Asset (Network Performance and Organisational Capability), Financial, Environmental, Regulatory and/or Reputational impacts of an option. In the context of project risk, ARTC recognises a seventh area of risk focus – Schedule.
Risk Identification	The process of finding, recognising and describing risks. Risk identification involves the identification of risk sources, events, their causes, and their potential consequences.

Risk Management	The systematic application of policies, procedures, and practices in order to understand and address risks.
Risk Management Framework	Set of components that provide the foundations for designing, implementing, monitoring, reviewing and continually improving risk management throughout the organisation. The foundations include policy, objectives, mandate and commitment to manage risk.
Risk Register	A record of identified risks relating to the objectives of the organisation, business division or project.
Scope	Clearly defined set of parameters that enable focussed risk assessment.
Target Risk Level	The risk level expected to remain after implementation of actions.
Significant risk	A risk determined by the Executive as a high-level risk which can adversely affect the achievement of the company's objectives.

4.2 Appendix B – ARTC Risk Management Responsibilities and Accountabilities

Role	Responsibility / Accountability
Chief Executive Officer	Chief Executive Officer is accountable for: <ul style="list-style-type: none"> • Ensuring risks are managed in line with ARTC’s Risk Appetite as set by the ARTC Board.
General Counsel & Company Secretary	General Counsel & Company Secretary is accountable for: <ul style="list-style-type: none"> • Maintaining: <ul style="list-style-type: none"> ○ an organisation-wide framework for the management of risks at ARTC ○ a system to support the administration of this framework ○ a corporate team to provide guidance to the organisation on the management of risk. • Periodic reporting to the Executive Committee and Board Risk Committee on the status of risks and risk management practices across ARTC.
Group Executives	Group Executives are responsible for: <ul style="list-style-type: none"> • Ensuring the risks within their area of responsibility are managed in accordance with the ARTC Risk Appetite as set by the Board; and • Ensuring legislative obligations in respect to risk management are met for risks within their area of responsibility; and • Providing updates on risks within their area of responsibility to satisfy reporting requirements to the Executive Committee and Board Risk Committee
General Manager Corporate Risk	General Manager Corporate Risk is responsible for: <ul style="list-style-type: none"> • Developing and implementing systems and processes across ARTC to enable effective management of risks; • Coordinating risk information for the purpose of reporting to the Executive Committee and Board Risk Committee • Providing advice and reasonable assistance to Project Managers • Determining, in consultation with Project Manager and other impacted personnel, whether risks should be kept open and transferred to another party at the end of a project.
Project Approval Authority	Project Approval Authority is responsible for: <ul style="list-style-type: none"> • Providing leadership and oversight in respect to Project Risk Management activities • Approving Program / Project Risk Management Plans
Project Manager	Project Managers are responsible for: <ul style="list-style-type: none"> • Provision of resources to enable required risk activities to be completed • Development and implementation of Program / Project Risk Management Plan • Establishing appropriate cost and schedule parameters for the project risk matrix • Maintaining appropriate risk records and undertaking periodic reviews • Assigning Risk and Control Owners for Program / Project Risks • Monitoring Program / Project Risks and escalating as required

<p>Risk Owners</p>	<p>Risk Owners are accountable for:</p> <ul style="list-style-type: none"> • Ensuring that they have appropriate oversight for the risks that they own, and that those risks are being managed in accordance with the ARTC Risk Appetite as set by the Board; and • Ensuring that periodic reviews of the risks that they own are conducted, including the effectiveness of their existing Controls, in accordance with required timeframes and appropriate records of review and updates are made; and • Reporting information on risks in accordance with escalation requirements and governance arrangements. <p>Risk Owners are responsible for:</p> <ul style="list-style-type: none"> • Ensuring that appropriate Proposed Treatments and Actions are identified and being actioned for the risks that they own.
<p>Risk Administrator</p>	<p>Risk Administrators are responsible for:</p> <ul style="list-style-type: none"> • Updating the content of a risk record, as requested by or on behalf of the Risk Owner; and • Monitoring that Actions associated with risks are completed in a timely manner; and • Submitting a risk record for approval to the Risk Owner when transitioning a risk from a 'draft' state; and • Placing a risk under formal review as requested by or on behalf of the Risk Owner; and • Closing out risk records as requested by or on behalf of the Risk Owner.
<p>Control Owner</p>	<p>Control Owners are accountable for:</p> <ul style="list-style-type: none"> • Ensuring effective design, implementation, and ongoing application of a controls they are responsible for; and • Communicating any changes to a control to impacted parties.
<p>Staff at all levels</p>	<p>Workers are responsible for:</p> <ul style="list-style-type: none"> • Identifying and communicating local worksite hazards and their controls to all personnel at that particular worksite, and reporting risks to their line manager; and • Providing relevant information and input in risk assessments, where requested.
<p>Contractor</p>	<p>Where ARTC employees engage contractors, suppliers or consultants they are required to ensure these organisations and individuals are aware of ARTC requirements for risk management and as a minimum, apply these for the work and services they provide for us.</p> <p>Where contractors, suppliers or consultants undertake risk assessments on behalf of ARTC, they are required to be undertaken in accordance with this procedure.</p>

4.3 Appendix D – Associated Documents

Relationship	Associated documents
<p>Parent</p>	<p>The following documents are parent to this procedure:</p> <ul style="list-style-type: none"> • RSK-GP-004 - ARTC Risk Management Framework • COR-PO-006 - ARTC Risk Management Policy • RSK-GP-007 - ARTC Risk Appetite Statement
<p>Subordinate</p>	<p>The following documents are subordinate to this procedure:</p> <ul style="list-style-type: none"> • RSK-GP-001 ARTC Business Risk Profile • RSK-GP-003 ARTC Risk Management (SMS process – available via ARTC SMS) • RSK-WI-001 - Application of Risk Management • RSK-WI-005 - Project Risk Management • RSL-FM-005 - Project Risk Management Plan Template
<p>Reference documents</p>	<p>The following documents were referenced in this procedure:</p> <ul style="list-style-type: none"> • ISO 31000:2018 Risk Management – Guidelines