



Moving from ISO/IEC 27001:2005 to ISO/IEC 27001:2013

The new international standard
for information security
management systems

Successful businesses understand the value of timely, accurate information, good communications and secrecy. Information security is as much about exploiting the opportunities of our interconnected world as it is about risk management.

That's why organizations need robust information security management.

This guide has been designed to help you meet the requirements of the new international standard for information security management, ISO/IEC 27001:2013, which is the first revision of ISO/IEC 27001:2005.

ISO/IEC 27001:2013 specifies the requirements for establishing, implementing, maintaining and continually improving an information security management system (ISMS) for any organization, regardless of type or size. BSI recommends that every business has a system in place to maintain the confidentiality, integrity and availability of information. This will include its own information as well as customer information and other interested parties. In an ever increasing interconnected world the wisdom of doing this cannot be overestimated.

Meeting the requirements of the new international standard has never been easier. This guide is based on David Brewer's new books 'An introduction to ISO/IEC 27001:2013', which shares practical

guidance on how to meet the requirements of ISO/IEC 27001:2013, and 'Understanding the new ISO management system requirements', which looks at management systems in general and how to transition them to the new standards. These books are available through the BSI shop.

This transition guide will help you understand the relationship between ISO/IEC 27001:2013 and its predecessor ISO/IEC 27001:2005 and the impact that the new standard is likely to have on your existing ISMS.

NB. *This transition guide is designed to be read in conjunction with BS ISO/IEC 27001:2013 – Information technology – Security techniques – Information security management systems – Requirements. It does not contain the complete content of the standard and should not be regarded as a primary source of reference in place of the standard itself.*



Why adopt an information security standard?

There are various reasons why organizations choose to have an information security management system (ISMS). These broadly fit broadly into two categories: market assurance and governance. Market assurance concerns the ability of an ISMS to provide confidence, within the marketplace, in an organization's ability to look after information securely. In particular, it inspires confidence that the organization will maintain the confidentiality, integrity and availability of customer information. Governance concerns how organizations are managed. In this case, an ISMS is recognized as being a proactive way to manage information security.

A typical scenario in the case of market assurance is when a company demands various assurances from its suppliers in order for them to continue as suppliers to that company. The norm used to be that such companies would require their suppliers to conform to ISO 9001, but now companies are also looking for assurances from their suppliers with regards to ISO/IEC 27001. In this case, the company will have a duty of due care to preserve the security of the information in its custody. If that information is shared with a supplier, then the company would be failing in its duty of care if the supplier's handling of that information was insecure. It doesn't matter whether the company chooses to do this for reasons of governance or market assurance, it only matters that it does

As the two categories are closely related, an organization may initially choose to have an ISMS in order to inspire confidence within the marketplace. Once it has its ISMS, as it matures, the people within the organization often experience the benefits of being able to better manage information security. Therefore the organization's reasons for having an ISMS may expand to cover both market assurance and governance. Likewise, another organization might start out by having an ISMS for better management. However, as its ISMS matures, it may communicate its experiences and news on successful certification audits to the marketplace and learn the power of market assurance to attract new customers.

Implementing ISO/IEC 27001

ISO/IEC 27001:2013 specifies the requirements for establishing, implementing, maintaining and continually improving an ISMS. These requirements describe the intended behaviour of an ISMS once it is fully operational. The standard is not a step by step guide on how to build or create an ISMS.

However there are a number of books and other standards in the ISO/IEC 27000 series of standards which can assist. There are three core standards:

1 ISO/IEC 27003: Information technology —Security techniques — Information security management system implementation guidance;

2 ISO/IEC 27004, Information technology —Security techniques — Information security management — Measurement; and

3 ISO/IEC 27005, Information technology —Security techniques — Information security risk management.

All three guidance standards are currently being revised, and presently only address the requirements of ISO/IEC 27001:2005.

Comparing ISO/IEC 27001:2013 with ISO/IEC 27001:2005

ISO/IEC 27001:2013 is the first revision of ISO/IEC 27001. First and foremost, the revision has taken account of practical experience of using the standard: there are now over 17,000 registrations worldwide. However, there have been two other major influences on the revision. The first is an ISO requirement that all new and revised management system standards must conform to the high level structure and identical core text defined in Annex SL to Part 1 of the ISO/IEC Directives. Conformance to these requirements will have a tendency to make all management system standards look the same, with the intention that management system requirements that are not discipline-specific are identically worded in all management system standards. This is good news for organizations that operate integrated management systems, i.e. management systems that conform to several standards, such as ISO 9001 (quality), ISO 22301 (business continuity) as well as ISO/IEC 27001. The second influence was a decision to align ISO/IEC 27001 with the principles and

guidance given in ISO 31000 (risk management). Again, this is good news for integrated management systems as now an organization may apply the same risk assessment methodology across several disciplines.

The result is that structurally ISO/IEC 27001:2013 looks very different to ISO/IEC 27001:2005. In addition, there are no duplicate requirements, and the requirements are phrased in a way, which allows greater freedom of choice on how to implement them. A good example of this is that the identification of assets, threats and vulnerabilities is no longer a prerequisite for the identification of information security risks. The standard now makes it clearer that controls are not to be selected from Annex A, but are determined through the process of risk treatment. Nevertheless, Annex A continues to serve as a cross-check to help ensure that no necessary controls have been overlooked.

New concepts have been introduced (or updated) as follows:

New/updated concept	Explanation
Context of the organization	The environment in which the organization operates
Issues, risks and opportunities	Replaces preventive action
Interested parties	Replaces stakeholders
Leadership	Requirements specific to top management
Communication	There are explicit requirements for both internal and external communications
Information security objectives	Information security objectives are now to be set at relevant functions and levels
Risk assessment	Identification of assets, threats and vulnerabilities is no longer a prerequisite for the identification of information security risks
Risk owner	Replaces asset owner
Risk treatment plan	The effectiveness of the risk treatment plan is now regarded as being more important than the effectiveness of controls
Controls	Controls are now determined during the process of risk treatment, rather than being selected from Annex A
Documented information	Replaces documents and records
Performance evaluation	Covers the measurement of ISMS and risk treatment plan effectiveness
Continual improvement	Methodologies other than Plan-Do-Check-Act (PDCA) may be used

Clause 0: Introduction

This is a much shorter clause than its predecessor. In particular the section on the PDCA model has been removed. The reason for this is that the requirement is for continual improvement (see Clause 10) and PDCA is just one approach to meeting that requirement. There are other approaches, and organizations are now free to use them if they wish.

The introduction also draws attention to the order in which requirements are presented, stating that the order does not reflect their importance or imply the order in which they are to be implemented.

Clause 1: Scope

This, too, is a much shorter clause. In particular there is no reference to the exclusion of controls in Annex A.

Clause 2: Normative references

The only normative reference is to ISO/IEC 27000, Information technology — Security techniques — Information security management systems — Overview and vocabulary.

Clause 3: Terms and definitions

There are no longer any terms or definitions in ISO/IEC 27001:2013. Instead, readers are referred to ISO/IEC 27000. However, please ensure that you use a version of ISO/IEC 27000 that was published after ISO/IEC 27001:2013 otherwise it will not contain the correct terms or definitions. This is an important document to read. Many definitions, for example 'management system' and 'control' have been changed and now conform to the definitions given in the new ISO directives and ISO 31000. If a term is not defined in ISO/IEC 27000, please use the definition given in the Oxford English Dictionary. This is important, otherwise confusion and misunderstanding may be the result.

Clause 4: Context of the organization

This is a new clause that in part addresses the depreciated concept of preventive action and in part establishes the context for the ISMS. It meets these objectives by drawing together relevant external and internal issues (i.e. those that affect the organization's ability to achieve the intended outcome(s) of its ISMS) with the requirements of interested parties to determine the scope of the ISMS.

It should be noted that the term 'issue' covers not only problems, which would have been the subject of preventive action in the previous standard, but also important topics for the ISMS to address, such as any market assurance and governance goals that the organization might set for the ISMS. Further guidance is given in Clause 5.3 of ISO 31000:2009.

Note that the term 'requirement' is a 'need or expectation that is stated, generally implied or obligatory'. Combined with Clause 4.2, this in itself

can be thought of as a governance requirement, as strictly speaking an ISMS that did not conform to generally-accepted public expectations could now be ruled nonconformant with the standard.

The final requirement (Clause 4.4) is to establish, implement, maintain and continually improve the ISMS in accordance with the requirements the standard.

Clause 5: Leadership

This clause places requirements on 'top management' which is the person or group of people who directs and controls the organization at the highest level. Note that if the organization that is the subject of the ISMS is part of a larger organization, then the term 'top management' refers to the smaller organization. The purpose of these requirements is to demonstrate leadership and commitment by leading from the top.

A particular responsibility of top management is to establish the information security policy, and the standard defines the characteristics and properties that the policy is to include.

Finally, the clause places requirements on top management to assign information security relevant responsibilities and authorities, highlighting two particular roles concerning ISMS conformance to ISO/IEC 27001 and reporting on ISMS performance.

Clause 6: Planning

Clause 6.1.1, General: This clause works with Clauses 4.1 and 4.2 to complete the new way of dealing with preventive actions. The first part of this clause (i.e. down to and including 6.1.1 c)) concerns risk assessment whilst Clause 6.1.1 d) concerns risk treatment. As the assessment and treatment of information security risk is dealt with in Clauses 6.1.2 and 6.1.3, then organizations could use this clause to consider ISMS risks and opportunities.

Clause 6.1.2, Information security risk assessment: This clause specifically concerns the assessment of information security risk. In aligning with the principles and guidance given in ISO 31000, this clause removes the identification of assets, threats and vulnerabilities as a prerequisite to risk identification. This widens the choice of risk assessment methods that an organization may use and still conforms to the standard. The clause also refers to 'risk assessment acceptance criteria', which allows criteria other than just a single level of risk. Risk acceptance criteria can now be expressed in terms other than levels, for example, the types of control used to treat risk.

The clause refers to 'risk owners' rather than 'asset owners' and later (in Clause 6.1.3 f)) requires their approval of the risk treatment plan and residual risks.

In other ways the clause closely resembles its counterpart in ISO/IEC 27001:2005 by requiring organizations to assess consequence, likelihood and levels of risk.

Clause 6.1.3, Information security risk treatment: This clause concerns the treatment of information security risk. It is similar to its counterpart in ISO/IEC 27001:2005, however, it refers to the 'determination' of necessary controls rather than selecting controls from Annex A. Nevertheless, the standard retains the use of Annex A as a cross-check to make sure that no necessary control has been overlooked, and organizations are still required to produce a Statement of Applicability (SOA). The formulation and approval of the risk treatment plan is now part of this clause.

Clause 6.2, Information security objectives and planning to achieve them: This clause concerns information security objectives. It uses the phrase "relevant functions and levels", where here, the term 'function' refers to the functions of the organization, and the term 'level', its levels of management, of which 'top management' is the highest. The clause defines the properties that an organization's information security objectives must possess.

Clause 7: Support

This clause begins with a requirement that organizations shall determine and provide the necessary resources to establish, implement, maintain and continually improve the ISMS. Simply expressed, this is a very powerful requirement covering all ISMS resource needs.

The clause continues with requirements for competence, awareness and communication, which are similar to their counterparts in ISO/IEC 27001:2005.

Finally, there are the requirements for 'documented information'. 'Documented information' is a new term that replaces the references in the 2005 standard to 'documents' and 'records'. These requirements relate to the creation and updating of documented information and to their control. The requirements are similar to their counterparts in ISO/IEC 27001:2005 for the control of documents and for the control of records.

Note that the requirements for documented information are presented in the clause to that they refer to. They are not summarized in a clause of their own, as they are in ISO/IEC 27001:2005.

Clause 8: Operation

This clause deals with the execution of the plans and processes that are the subject of previous clauses.

- 1 Clause 8.1** deals with the execution of the actions determined in Clause 6.1, the achievement of the information security objectives and outsourced processes;
- 2 Clause 8.2** deals with the performance of information security risk assessments at planned intervals, or when significant changes are proposed or occur; and
- 3 Clause 8.3** deals with the implementation of the risk treatment plan.

Clause 9: Performance evaluation

Clause 9.1, Monitoring, measurement, analysis and evaluation: The first paragraph of Clause 9.1 states the overall goals of the clause. As a general recommendation, determine what information you need to evaluate the information security performance and the effectiveness of your ISMS. Work backwards from this 'information need' to determine what to measure and monitor, when, who and how. There is little point in monitoring and making measurements just because your organization has the capability of doing so. Only monitor and measure if it supports the requirement to evaluate information security performance and ISMS effectiveness.

Note that an organization may have several information needs, and these needs may change over time. For example, when an ISMS is relatively new, it may be important just to monitor the attendance at, say, information security awareness events. Once the intended rate has been achieved, the organization might look more towards the quality of the awareness event. It might do this by setting specific awareness objectives and determining the extent to which the attendees have understood what they have learnt. Later still, the information need may extend to determine what impact this level of awareness has on information security for the organization.

Clause 9.2, Internal audit: This clause is similar to its counterpart in ISO/IEC 27001:2005. However, the requirement holding management responsible for ensuring that audit actions are taken without undue delay has been removed, as it is effectively covered by the requirements in Clause 10.1 (in particular 10.1 a), c) and d)). The requirement that auditors shall not audit their own work has also been removed, as it is covered by the requirement to ensure objectivity and impartiality (Clause 9.2 e)).

Clause 9.3, Management review: Rather than specify precise inputs and outputs, this clause now places requirements on the topics for consideration during the review. The requirement for reviews to be held at planned intervals remains but the requirement to hold the reviews at least once per year has been dropped.

Clause 10: Improvement

Due to the new way of handling preventive actions, there are no preventive action requirements in this clause. However, there are some new corrective action requirements. The first is to react to nonconformities and take action, as applicable, to control and correct the nonconformity and deal with the consequences. The second is to determine whether similar nonconformities exist, or could potentially occur. Although the concept of preventive action has evolved there is still a need to consider potential nonconformities, albeit as a consequence of an actual nonconformity. There is also a new requirement to ensure that corrective actions are appropriate to the effects of the nonconformities encountered.

The requirement for continual improvement has been extended to cover the suitability and adequacy of the ISMS as well as its effectiveness, but it no longer specifies how an organization achieves this.

Annex A

The title of Annex A is now "reference control objectives and controls" and the introduction is simplified. It states that the control objectives and controls are directly derived from ISO/IEC 27002:2013 and that the Annex is to be used in the context of Clause 6.1.3.

During the revision of ISO/IEC 27002 the number of controls has been reduced from 133 controls to 114 controls, and the number of major clauses has been expanded from 11 to 14. Some controls are identical or otherwise very similar; some have been merged together; some have been deleted and some are new. For example:

- 1 A.5.1.1, Policies for information security is very similar to the original A.5.1.1, Information security policy document.
- 2 The old A.10.10.1, Audit logging, A.10.10.2, Monitoring of system use, and A.10.10.5, Fault logging, have been merged together to form the new A.12.4.1, Event logging.
- 3 The old A.11.6.2, Sensitive system isolation, has been removed on the grounds that in an interconnected world, such a control defeats the objective of being interconnected.
- 4 A.17.2.1, Availability of information processing facilities is a new control.

It is important to appreciate that the usefulness of a control to an organization should not change because it has been removed from

Annex A. In accordance with Clause 6.1.3, controls are now determined on the basis of risk treatment. If an organization wishes to treat particular risks by deliberately not connecting a computer to the Internet or other networks, then it will need to use a control like the old A.11.6.2 regardless of whether it is in Annex A or not.

Annex A remains as a 'normative annex'. This is not because Annex A contains normative requirements but because, by ISO rules, it is referenced from a normative requirement, i.e. in this case, Clauses 6.1.3 c) and d).

Other annexes

The original Annex B, OECD principles and this international standard, has been dropped as it is now an old reference, which refers to PDCA.

The old Annex C, Correspondence between ISO 9001:2000, ISO 14001:2004 and this international standard, has also been dropped because both of these standards are being revised and will use the same high level structure and identical core text as ISO/IEC 27001:2013.

Annex B, Bibliography, of ISO/IEC 27001:2013 is an updated version of its counterpart, Annex D in ISO/IEC 27001:2005.

Documented information

The requirements for documented information are spread throughout the standard. However, in summary they are:

4.3	Scope of the ISMS	8.1	Operational planning and control
5.2	Information security policy	8.2	Results of the information security risk assessments
6.1.2	Information security risk assessment process	8.3	Results of the information security risk treatment
6.1.3	Information security risk treatment process	9.1	Evidence of the monitoring and measurement results
6.1.3 d)	Statement of Applicability	9.2 g)	Evidence of the audit programme(s) and the audit results
6.2	Information security objectives	9.3	Evidence of the results of management reviews
7.2 d)	Evidence of competence	10.1 f)	Evidence of the nature of the nonconformities and any subsequent actions taken
7.5.1 b)	Documented information determined by the organization as being necessary for the effectiveness of the ISMS	10.1 g)	Evidence of the results of any corrective action



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David Brewer – biography

David Brewer, PhD, FBCS is recognized worldwide for the contributions he has made to information security management. He was one of the first consultants to advise the British Government on information security matters in the early 1980s and was one of the developers of the original ISMS standard, BS 7799-2:2002. He has provided ISMS training and consultancy in Europe, the US, East Africa, the Middle East and the Far East, and he is the administrator of an integrated management system conforming to ISO 9001, ISO/IEC 27001 and ISO 22301. He is a member of the ISO committee responsible for the ISO/IEC 27000 series of standards, played a significant role in developing ISO/IEC 27001:2013 and is a co-editor for the revision of ISO/IEC 27004.

We know ISO/IEC 27001; BSI shaped the original standard.

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bsi.

BSI Group India

The Mira Corporate Suites
A-2, Plot No 182, Ishwar Nagar
Mathura Road, New Delhi - 110065
India

T: +91 11 2692 9000
E: info.in@bsigroup.com
bsigroup.co.in

