

STANDARD AUDIT PROGRAMME GUIDE

SAPG Ref.: 0901	Function: Research & Development	Activity/System: Product Development
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Company:	Division:	Country:	Site:
Audit Ref.:	Date:	Completed by:	Reviewed by:

Control Objective(s): (a) To ensure that new and existing products are researched and developed in accordance with market factors and the defined strategic objectives of the organisation; (b) To ensure that all product developments are fully assessed in relation to the potential market, estimated production costs and selling price; (c) To ensure that R & D resources are adequate and targeted on those areas with the greatest potential for the organisation; (d) To ensure that R & D facilities, resources and costs are commensurate with the planned activities; (e) To ensure that management maintain an accurate and up-to-date awareness of current technological trends and their potential application for the organisation; (f) To ensure that an adequate level of general/speculative research is undertaken to enable the organisation to achieve a technological advantage over its competitors; (g) To ensure that the resources required to undertake research and development are accurately identified, costed, justified and authorised; (h) To ensure that all product development and research projects are suitably assessed and authorised to proceed; (i) To ensure that the design assessment, feasibility, and product specification processes are adequate and address matters of quality and performance; (j) To ensure that the research activity, theories, specifications, drawings, technology, and the eventual products are adequately protected from exploitation by others; (k) To ensure that research and development activities do not, in themselves, violate existing patents and copyrights; (l) To ensure that the use of external research and specialist facilities is subject to assessment, authorisation, monitoring, and effective levels of security; (m) To ensure that specialist staff are recruited, appropriately trained, and retained for the benefit of the organisation; (n) To ensure that all information about the organisation's product developments and research programme remains confidential; (o) To ensure that all the actual development costs are correctly identified and monitored against the established budgets; (p) To ensure that the progress of all research and development projects is adequately monitored by management and appropriate changes are applied when necessary and authorised; (q) To ensure that adequate, appropriate and legally required levels of testing are conducted and evidenced; (r) To ensure that all significant project variations or problems are promptly reported to management for corrective action; (s) To ensure that the objectives and performance criteria established at the outset of the development are actually achieved; (t) To ensure that all the relevant legal and regulatory requirements are met; and (u) To ensure that the market launch of new or modified products is adequately planned, appropriately timed to maximise the market impact, coordinated between the affected functions, and monitored.

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Seq.	Risk/Control Issue	Current Control/Measure	WP Ref.	Effective Yes / No	Compliance Testing	Substantive Testing	Weakness to Report
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1	Key Issues						
1.1	Has management defined and authorised strategic business objectives, and how can they be sure that all product developments and research activities comply with these targets? Also see SAPG 0902						
1.2	Has management established, authorised and implemented documented procedures for the development and evolution of all product ranges?						
1.3	How can management be assured that their product plans remain adequate, appropriate, viable, etc.?						
1.4	How can management be sure that all product development projects are valid, justified and authorised?						

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1.5	What processes govern the direction of research activities in order to ensure that attention is focused upon those projects with the greatest potential benefit and implications for the organisation?						
1.6	Has an R & D strategy and plan been developed, documented and authorised, and what steps are taken to effectively monitor progress and achievements?						
1.7	How does management ensure that R & D resources are justified, adequate, and relative to the planned activities?						
1.8	How can management be assured that they maintain an accurate and up-to-date awareness of all those current technologies, innovations, etc. with a potential impact for the						

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	organisation?						
1.9	Beyond the specific product development projects, is the organisation sufficiently active in general and sector related speculative research in order that a technological advantage is maintained over competitors and industry entrants?						
1.10	What processes ensure that all the resources required to undertake the development are accurately identified, costed, justified and authorised? Also see SAPG 0903						
1.11	What measures ensure that clear (and authorised) objectives and targets are established for each project (and is their achievement monitored and confirmed)?						
1.12	How can management be assured that the design assessment, feasibility, and specification processes are						

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	adequate and satisfactorily address quality, performance, and regulatory standards? Also see SAPG 0905						
1.13	What measures are taken to adequately protect research activities, intellectual property, specifications, and all research plans and data from either exploitation by others or unauthorised exposure?						
1.14	How does management ensure that research activities do not violate existing patents and copyrights?						
1.15	Are all product developments subject to adequate project management in order to cater for the following aspects?: - adequate coordination of all affected functions to						

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	<p>ensure achievement of development objectives;</p> <ul style="list-style-type: none"> - definition of key stages of the project and the ongoing monitoring of actual progress against target; - authorisation and control of all project resources and costs. <p>Also see SAPG 0904</p>						
1.16	<p>What steps does management take to retain the skills and knowledge of key specialist staff, and prevent others benefiting from the individual's expertise?</p>						
1.17	<p>What measures ensure that new or modified products are subject to extensive, adequate and appropriate testing (including any sector specific, legally required, or specialist product testing requirements)?</p>						

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2	Detailed Issues						
2.1	What mechanisms prevent the investigation or development of a product outwith the defined and authorised strategic parameters of the business?						
2.2	Has management defined and authorised product development plans with the intention of extending and prolonging the life of existing products and introducing						

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	viable new lines?						
2.3	How does management ensure that its product plans remain relevant, up-to-date and in step with customer needs and market developments?						
2.4	Is appropriate account taken of competitor analysis and are critical marketing timing considerations identified and planned for in the research programme?						
2.5	What measures are in place to ensure that crucial costs and selling price targets are identified and monitored for achievement throughout the project?						
2.6	How does management ensure that research projects, product details, development plans and business development strategies remain confidential?						
2.7	What measures would						

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	prevent unauthorised research and development costs?						
2.8	When applicable, does the organisation take appropriate advantage of available government and research grants (and what measures ensure that eligibility for such schemes is maintained)?						
2.9	Are all appropriate technologies, processes and techniques developed by the organisation adequately protected (at the most appropriate time) from exploitation by others (and how can this be assured)?						
2.10	Are key staff involved in product development subject to either fidelity bonding or commercial confidentiality clauses in their employment contracts?						
2.11	What steps does management take to ensure that adequate numbers of specialist staff are recruited and that their skill						

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	levels are maintained through authorised training, etc.?						
2.12	If relevant expertise or specialist knowledge exists outwith the organisation, how does management ensure that the engagement of such external specialists is justified, authorised, accurately costed, and that progress is monitored?						
2.13	How can management be assured that external consultants will not exploit or pass on details of the research they are conducting on the organisation's behalf?						
2.14	How can management be confident that problems, shortcomings, cost overruns, etc. would be promptly detected and reported?						
2.15	What processes ensure that all research and development costs are identified, accounted for, and reflected						

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	in the corporate accounts?						
2.16	What mechanisms ensure the correct accounting treatment of R & D costs and the recovery of related taxation benefits whenever applicable?						
2.17	Have adequate arrangements been made to provide management with regular, accurate and relevant project information (i.e. progress, costs versus budgets, failures to achieve deadlines, technical problems, etc.)?						
2.18	Where appropriate, are products subject to testing under recognised trade, national or international quality /standards schemes?						
2.19	Prior to commercial launch, how can management be assured that products are (when applicable) subject to the appropriate licensing by government or trade						

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	regulators?						
2.20	<p>Upon launch of the product, how does management ensure that adequate plans are in place to address such matters as:</p> <ul style="list-style-type: none"> - adequacy of stocks; - provision of staff training; - launch timing to maximise the market impact; - coordination of all affected functions, etc. 						
2.21	How is the accuracy of data input from other systems (i.e. market research or planning) confirmed?						
2.22	How is the accuracy of data output to other systems (i.e. production control, sales management, etc.) confirmed?						

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SYSTEM INTERFACES FOR PRODUCT DEVELOPMENT (R & D)

It is unlikely that any activity or system will operate in complete isolation, but will need to interact with other data and systems in order to be fully effective. At a simple level, such interaction could relate to the input of data from a source system and the generation of amended or enhanced data which can be output to the next process. For example, taking coded transactions from an accounts payable system into the general ledger as the basis for subsequently producing management accounts information.

It is often at the point of interaction between systems where controls are critical. Auditors should be satisfied that the data moving between systems is consistent, complete and accurate, in order that the subsequent processes are undertaken upon a reliable basis.

The following table aims to plot, for the subject system of this Standard Audit Programme Guide, the potential interfaces with other systems which may require audit attention. Indicators are provided to differentiate between those interfaces which act as input sources to the subject system and those which are potential output targets. The "SAPG Ref." column records the reference number of the Programme Guide which addresses the issues for the related system

System	SAPG Ref.	Input Source	Output Target		System	SAPG Ref.	Input Source	Output Target
Planning	0104	√	√		Planning & Production Control	0601	√	√
Risk Management	0105	√	√		Product Development (Sales)	0701	√	
Legal Department	0106	√			R & D	0902-05	√	√
Capital Projects	0112	√	√					
Industry Regulation & Compliance	0113	√						
Treasury	0201	√						
Budgeting & Monitoring	0207	√	√					
Product / Project Accounting	0212	√	√					
Purchasing	0401	√	√					