

## Research and Development (R&D) Explained

We have attempted to provide some basic guidelines below, to help you define and measure R&D for completion of this survey. In some cases you may need to apply an element of judgement when compiling your figures. We accept approximations. Further information can be found in the Frascati Manual, which is the international source of methodology for collecting and using R&D statistics.

### Examples of R&D to be included

- Clinical trials phases I, II and III.
- Research into and original development (or substantial modification) of computer software, such as new programming languages and new operating systems.
- Design, construction and operation of prototypes where the main objective is technical testing or to make further improvements.
- Construction and operation of pilot plants while still in the experimental phase and the primary purpose of operation is non-commercial.
- 'Feedback R&D' directed at solving problems occurring beyond the original R&D phase, such as the resolution of technical problems arising in initial production runs.
- Research work in the social sciences, arts and humanities.

### Examples of R&D to be excluded

Unless used primarily as part of (or for the support of) R&D projects, the following are excluded:

- Clinical trial phase IV.
- Scientific and technical information services.
- Prospecting, exploring or drilling for minerals, petroleum or natural gas.
- Policy related studies, management studies, efficiency studies.
- Consumer surveys, advertising, market research.
- Routine quality control and testing.
- General purpose or routine data collection.
- Feasibility studies.
- Routine computer programming, systems maintenance or software application.
- Commercial, legal and administrative aspects of patenting, copyrighting or licensing activities.
- Activities associated with standards compliance.
- Specialised routine medical care, e.g. routine pathology services.

### At what stage does R&D end?

R&D ends when the work is no longer experimental, for example, when the material, product etc. is substantially developed and the primary objective is to:

- Develop markets.
- Plan for pre-production and undertake pre-production activities (such as demonstration of commercial viability, tooling up and trial production runs).
- Get production or control systems working smoothly.

If the primary objective is to make further technical improvements, then the work is still defined as R&D.