Who are we?

The Research & Development (R&D) Department is a team within NovitaTech, Novita's technology division. Our role is to conduct meaningful research and development within the disability field, keep abreast of technology and how it is being used within the field, and to provide technical and technological support for Novita's therapists (for research, trial or assessment purposes). ww.novitatech.org.au/research

What do we do and how do we do it?

The role of the Department is to maximise the usefulness and relevance of technology in the lives of people with a physical disability by conducting meaningful research and product development.

The Department does this by:

- Identifying and creating innovative solutions for unmet needs;
- Ensuring that solutions are available to all who have the need;
- Working in partnership with appropriate commercial and academic institutions to ensure cost effective solutions;
- Ensuring that when solutions are found, that this information is widely and freely publicised.

R&D's work is typically centred on equipment and Assistive Technology to assist people with a disability, as opposed to Novita's Clinical Research Department, which focuses on therapy based outcomes and evidence based practice. Where there are areas of overlap, the two Departments will work together cooperatively.

Projects both small and large, of varying technical degrees, are equally considered. The role of the R&D department is to find a solution to an identified problem or issue through:

- Conducting research to understand and identify the underlying problem,
- Market research to understand the existing and potential market,
- Prototyping, testing, and engineering design,
- Basic, applied, and clinical trial research (including focus groups),
- Product and project management,
- Creation of promotional materials, and
- Education.

Staff within the Department have core skills and expertise in biomedical engineering, the life sciences, biomechanics, mechanical engineering, electronics and software, design and marketing, and testing and Standards experience. We also have ready access to speech pathology and occupational therapy skills. Our Department has the ability to source and coordinate the necessary technical resources to complete a project, and have collaborative links with other Rehabilitation Engineering Centres around Australia (in Perth, Sydney, Melbourne and Brisbane) and around the world (in the United States, Canada and the United Kingdom).

How do we operate?

The R&D Department relies on hearing about problems or suggested ideas from parents, staff, clients, or other interested parties. We welcome input from all sectors, and involve the idea initiator throughout the lifetime of the project. We need a champion of the idea or problem to be available to provide feedback and input throughout this process. The Department also conducts self-generated research and seeks grant funding for special projects.

When a problem has been identified or an idea has been submitted, we ask the initiator to fill in a definition form that helps to define and refine the problem or idea. It will also help to determine how large or small the problem is (from an early stage) and the likely impact it will have on the lives of someone with a disability.

The idea is then passed through an assessment process that further refines the idea in terms of meeting the strategic direction and aims of the Department. If the submitted idea successfully passes through this process it is then taken on by the Department and a member of the R&D Team is appointed to the project as a central coordinator and point of contact.

What have we done?

The R&D Department has been involved in a number of significant projects over the years. Examples of the range of project work include:

- Developing Vocabulary Organiser (VO), a novel software tool for managing and organising vocabulary files for electronic device and key-word signing users. VO is a significant resource for Novita's Speech Pathology Department.
- The Department was awarded a Commonwealth Research Grant to conduct a clinical trial with 10 clients that investigated the success of readily available 'off-the-shelf' telecommunication options with people with various disabilities.
- Two Churchill Fellowship research projects have been conducted in the US, Canada, and the UK, both investigating how Assistive Technology is being used around the world to benefit people with a disability.
- Research into effective mountings, and investigating establishing a special 'mountings' team.

- Researching the growing field of integrated wheelchair controls, producing a comparison document of each system, and trialing one particular system with two Novita clients.
- Researching the convergence and effectiveness of laptop and Augmentative and Alternative Communication (AAC) devices.
- Piloting the Movement-to-Music Therapy system and the benefit music therapy could have for Novita's clients.
- Investigating the field of movement analysis and the benefits that a 2D or 3D system can offer.
- Having input to Standards development and Universal Design considerations within the field of telecommunications.
- Supporting engineering students on work experience placements and teaching sections of the Rehabilitation Engineering elective at Flinders University.

The Department welcomes and seeks your input. We can be contacted easily by email on r&d@novita.org.au