

# iDAPT<sup>®</sup> Services

Research, design, prototype, test.

iDAPT Services offers 'one-stop' capabilities to take your ideas and concepts for medical devices and turn them into reality. With a highly experienced and trained cross-functional team, iDAPT Services offers world-leading technologies, equipment and software expertise focused on meeting your needs. Whether you require one simple plastic prototype or the design and delivery of a complex, integrated device, iDAPT Services can do it all.

iDAPT Services is part of Toronto Rehabilitation Institute's research initiative. We offer our extensive knowledge and capabilities to a diverse client base - private businesses, institutions, individuals – anyone who requires support to

design, protect, develop, prototype and test new technologies. From its initial focus on commercialization of rehabilitation technologies, iDAPT Services' capabilities have grown to offer support in any health-related technology. Let iDAPT Services research, design, develop and deliver your products – leaving you time to focus on other areas or develop your business.

**We can help you  
move from an idea to  
a tested, functional  
prototype.**



*Rehabilitation saves life.*

# A team approach

At iDAPT Services, you will have access to some of the brightest talent in the country – as well as to qualified contacts in the community, including suppliers, manufacturers and Toronto Rehab researchers and clinical staff.



Electronics designers  
Industrial designers  
CNC machinists  
Mechanical engineers  
Clinical engineers  
Clinicians  
Biostatisticians  
Clinical trial designers

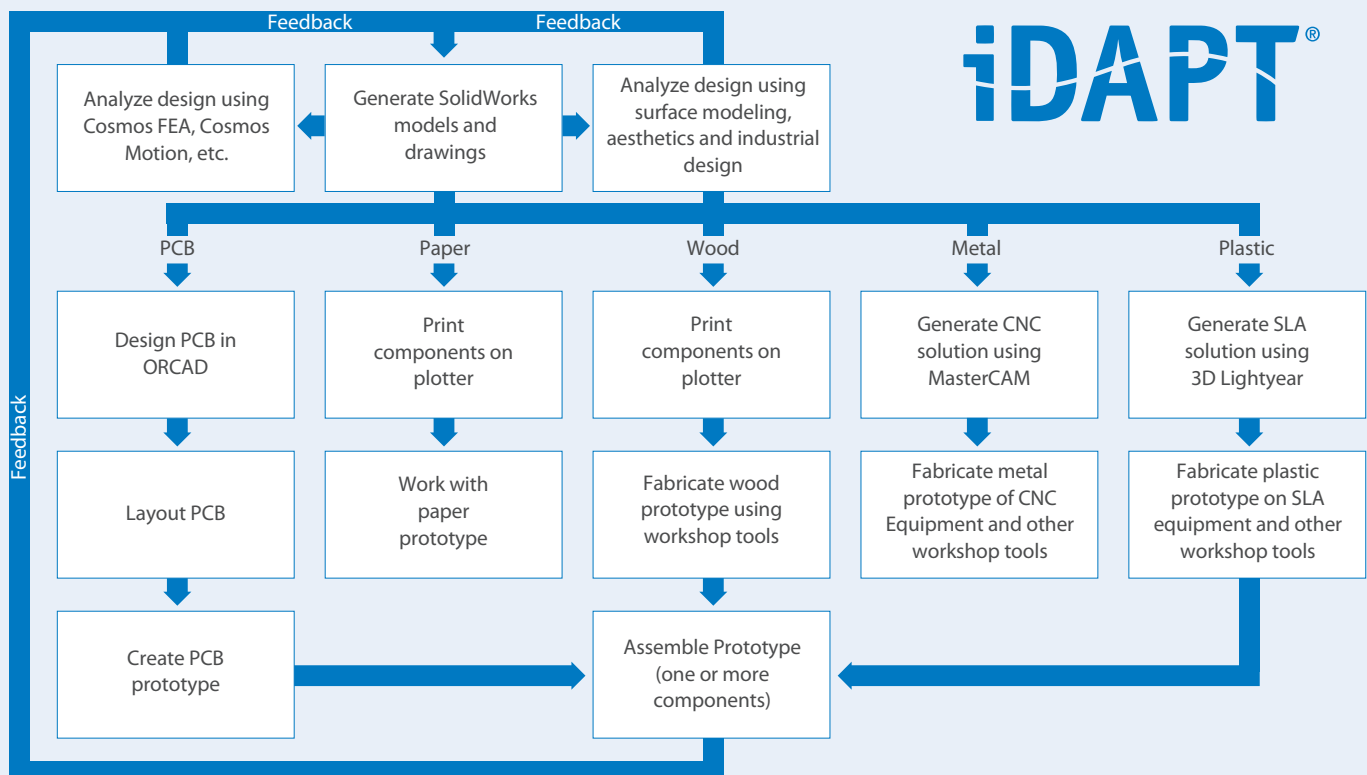


iDAPT Services assembles a cross-functional project team with the complementary skills to maximize value. Early involvement of all team members ensures that the feedback loop is closed – avoiding poor designs or manufacturing challenges that potentially add time and cost to the project.



## Prototyping Integration

At iDAPT Services, design and development software applications are effectively integrated throughout the project life cycle. Leveraging the experience of iDAPT Services yields real benefits.



# From mind to matter

- Translate initial concepts into attractive three-dimensional illustrations and physical concept models.
  - Turn existing objects into detailed CAD models using Handyscan 3D scanner.
  - Assist with patent searches and strategies.
  - Identify opportunities for government funding assistance for your product or program, from research to commercialization.
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- Conduct early design reviews to incorporate aesthetics, manufacturability and usability into the design.
  - Leverage integrated software applications to expedite design to production.
  - Ensure documentation meets regulatory guidance directives, such as FDA and Health Canada, during the project lifecycle.
  - Develop 3D models and drawings in CAD software packages.
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- Perform mechanical analyses for stress, strain, point loading and other requirements by using Cosmos Works™ FEA and Cosmos™ Motion.
  - Conduct biomechanical analyses including full 3D motion and force measurement.
  - Incorporate all feedback into design.
  - Run initial statistical analyses, as required.
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- Create prototypes in plastic, metal, wood, paper or composite media.
  - Provide access to full-service workshops with 5-axis CNC mill, CNC lathes, gas and plasma cutting, MIG, TIG and stick welding, tube benders, saws, drills, presses, and surface finishers.
  - Manage costs with SLA or FDM prototype printers.
  - Prepare electronics using automated PCB design and fabrication.
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- Arrange testing for single component up to complex equipment validation.
  - Facilitate clinical testing; prepare clinical trial protocols; meet with Ethics Review Boards; coordinate clinical researchers, biostatisticians and epidemiologists.
  - Arrange access to patients and care providers for clinical testing.
  - Perform health and safety testing, including formal risk analyses.
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- Produce a final product from single prototype to small production runs.
  - Complete all required documentation and reports.
  - Generate posters to illustrate final product using 42" colour plotter and graphical and creative software applications on different paper or plastic media.
  - Incorporate images and video into compelling presentations.

Concept

Design

Analysis

Fabrication

Validation

Production

Since its inception, iDAPT Services has helped a variety of companies and groups with their concepts and designs. Here are two examples.

## Case Study 1

## Alcohol Gel Hand Washing

**Challenge:** Develop a system to prompt hospital staff to wash their hands and track use.

**Approach:** The patented system consisted of wearable alcohol gel dispensers, tracking beacons mounted on the ceiling and small wireless receivers. The alcohol gel dispenser was initially designed in SolidWorks™ and uploaded into 3D Lightyear™ to create a high-quality plastic prototype with the SLA® 5000 stereolithography rapid prototyping machine. Battery clips and associated electronics were mounted in the plastic prototype and then tested. After iterations to incorporate user and industrial design improvements, the final design was completed.



## Case Study 2

## Patient Lifting Device

**Challenge:** Design a component for a patient lifting device.

**Approach:** Initially designed in SolidWorks™, the component underwent mechanical analysis using Cosmos™ FEA. The design was uploaded into 3D Lightyear™ to create a high-quality plastic prototype with the SLA® 5000 stereolithography rapid prototyping machine. After confirming that the prototype met the design objectives, the SolidWorks™ design was converted to a CNC solution using MasterCam™, and the metal prototype was milled using a 5-axis CNC milling machine.



For more information, to arrange a meeting, or to request a quote please contact iDAPT Services at:

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