



“What we can really use are some more scientists and some more engineers who are building and making things”

President Obama – April 2009, Georgetown





NRC Industrial Research Assistance Program (NRC-IRAP)

Support for Innovative Businesses

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Industrial Technology Advisor
Industrial Research Assistance Program
National Research Council Canada





"Who does the imaging, the scientist, the engineer or the programmer?"

YES

- What do they do?
- Where do they do it?
- How do you find them?



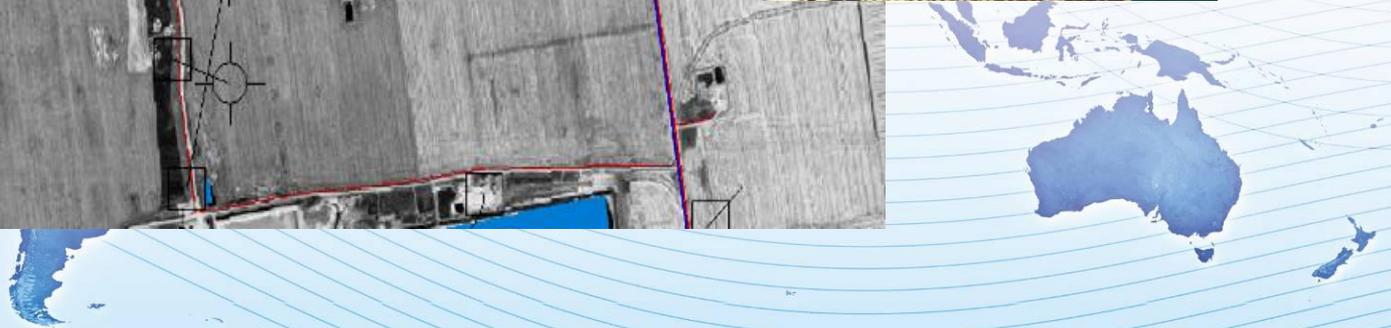
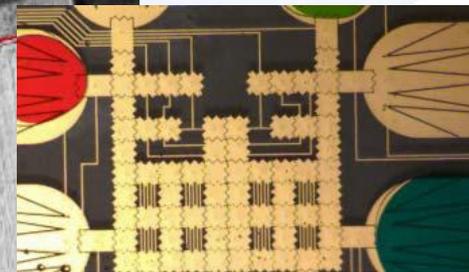
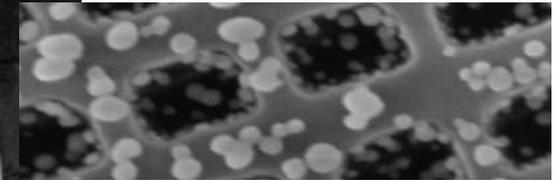


**Over the last 10+ years.....
IRAP has seen various imaging projects**

IRAP assists firms to develop, adopt and adapt technologies and incorporate them into competitive products and services to be commercialized in the global marketplace

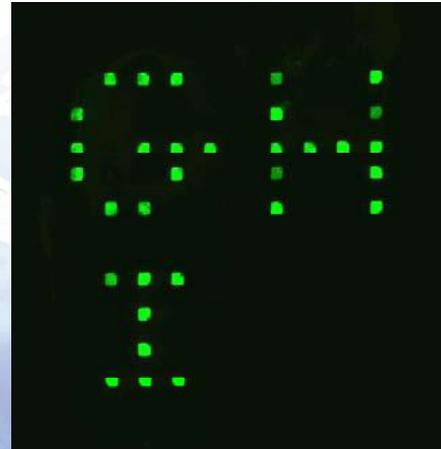
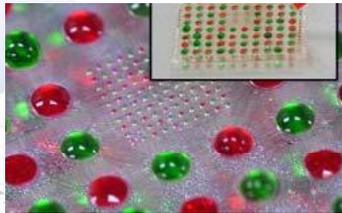
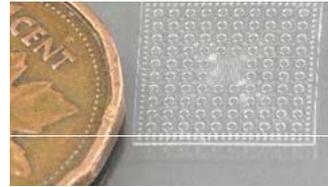
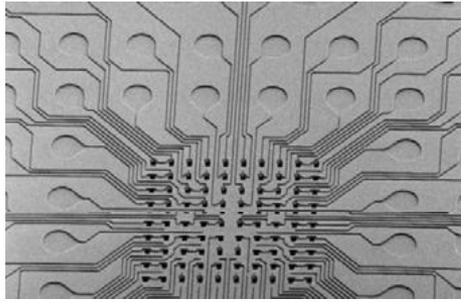


Very Large To very small



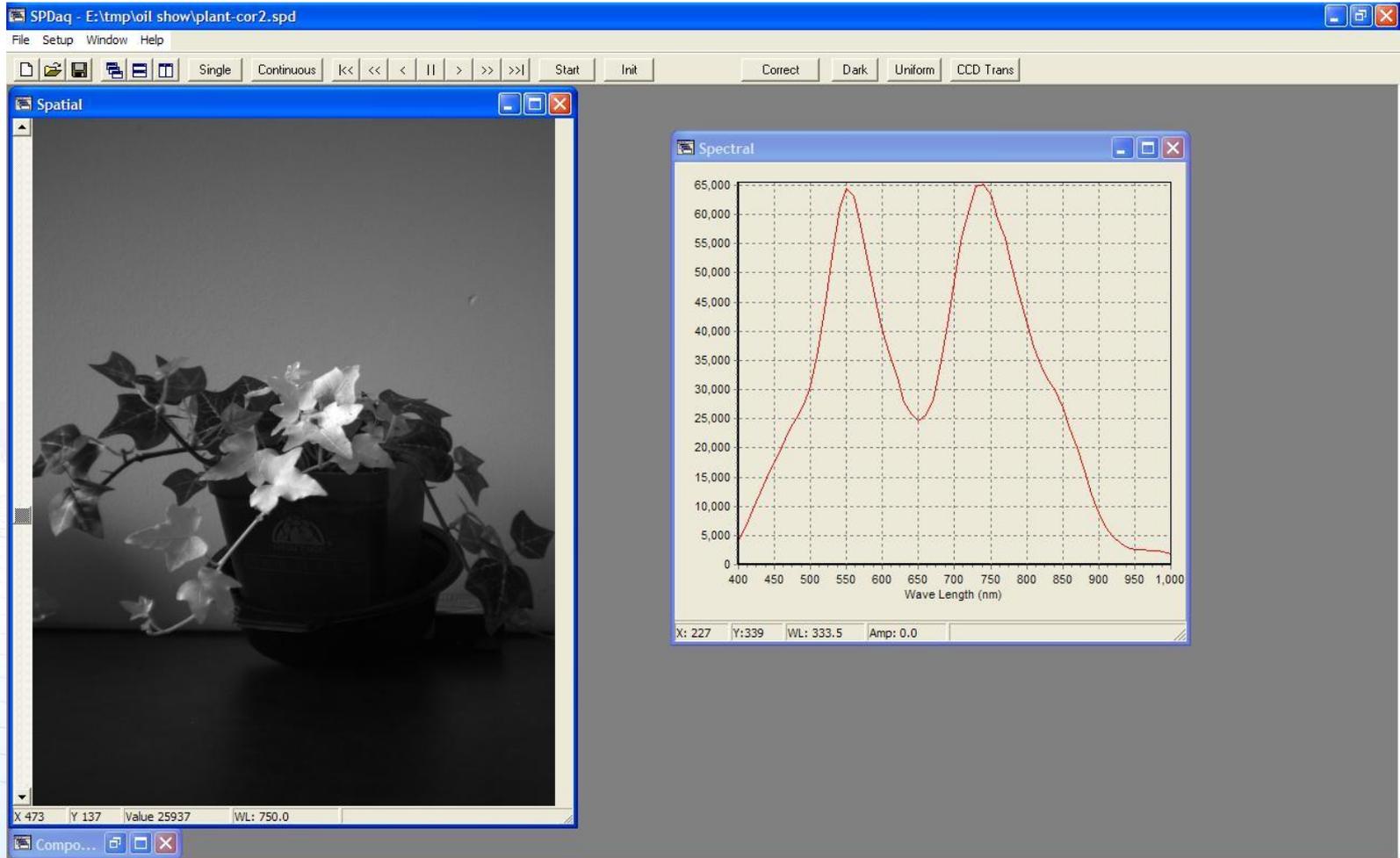


In varied application spaces like this.....

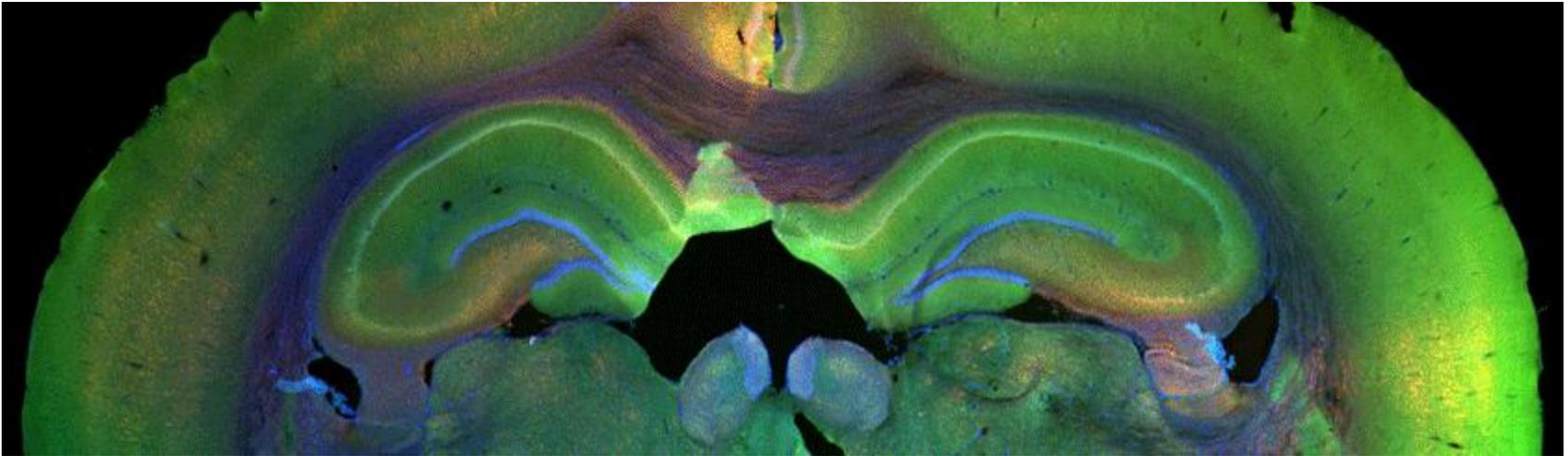




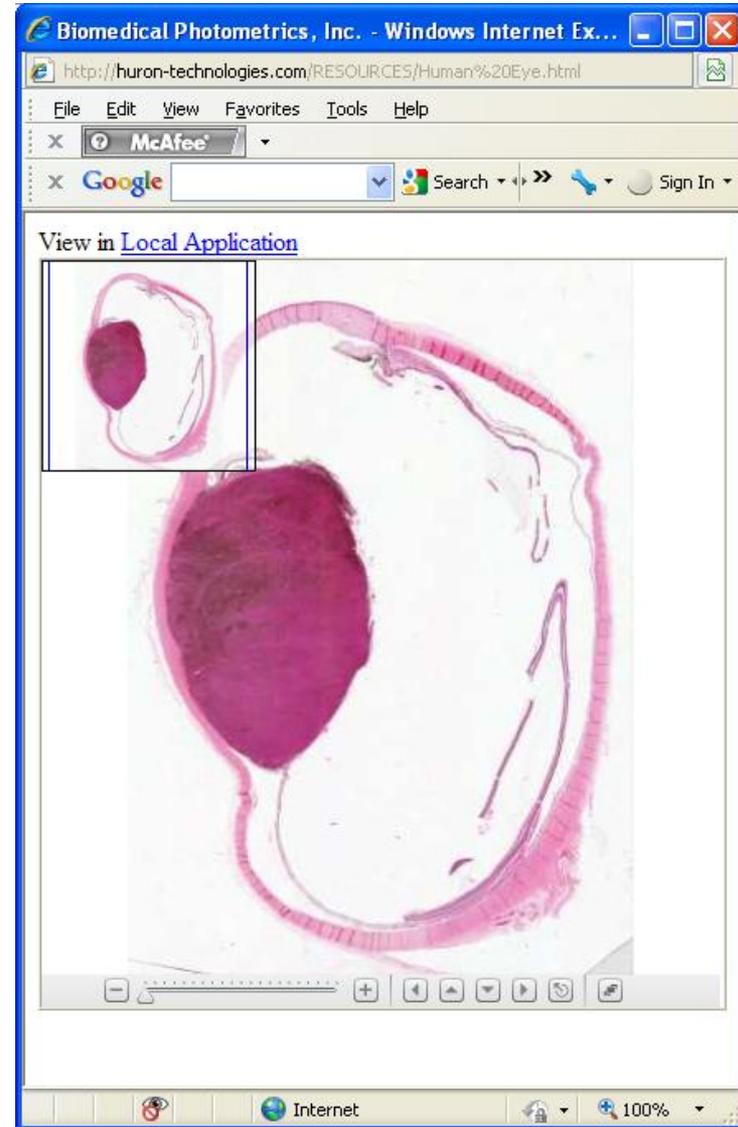
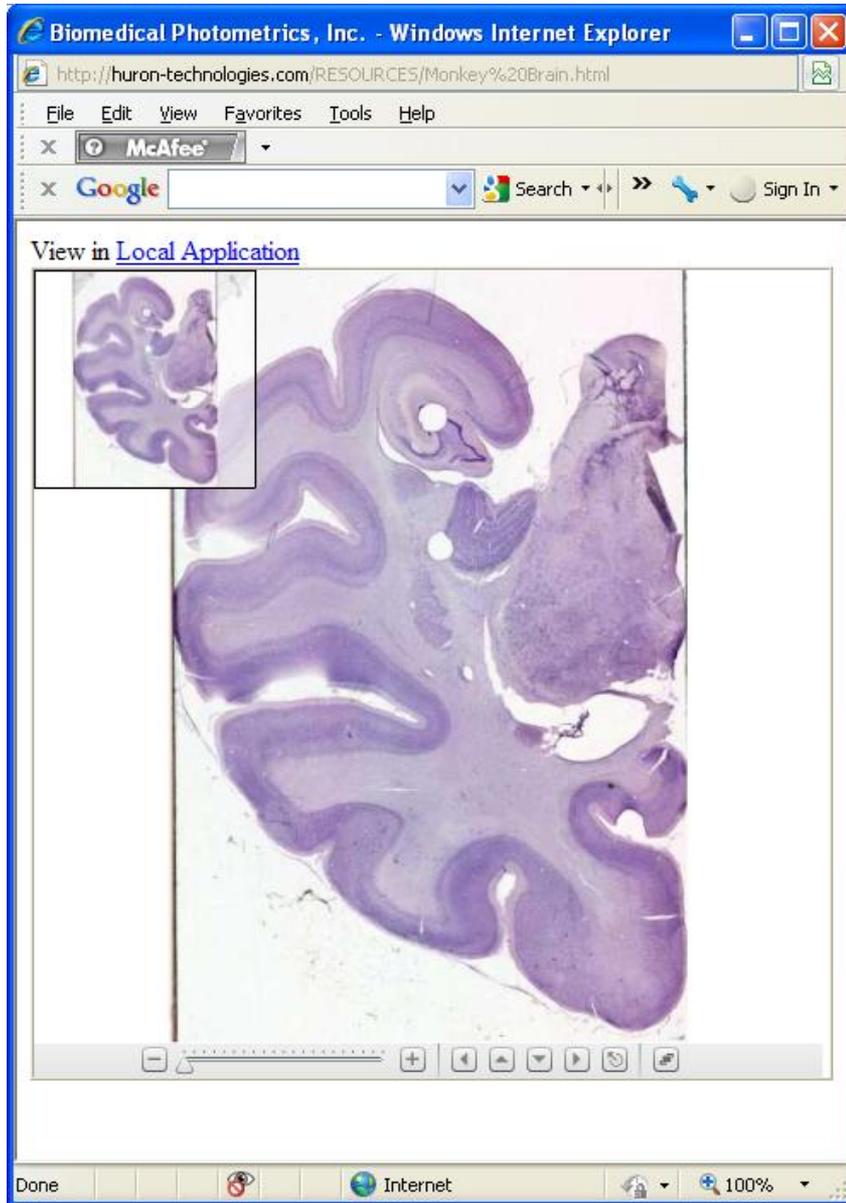
This you'll likely recognize.....



But what about this?

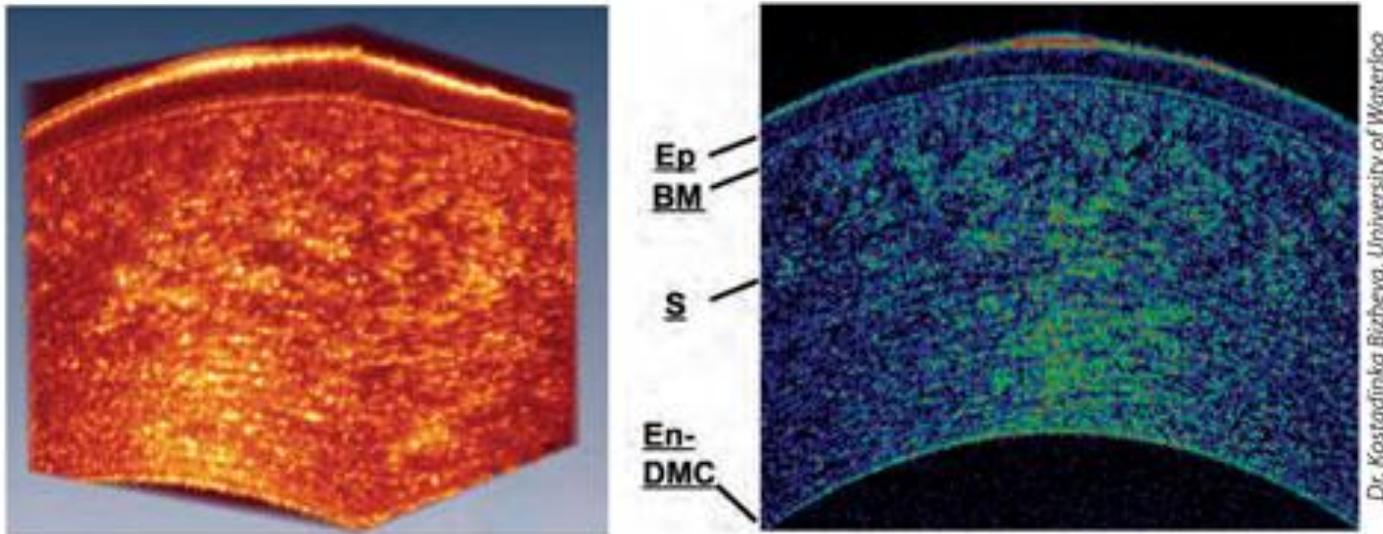


These?



From the last slide, the same body part?

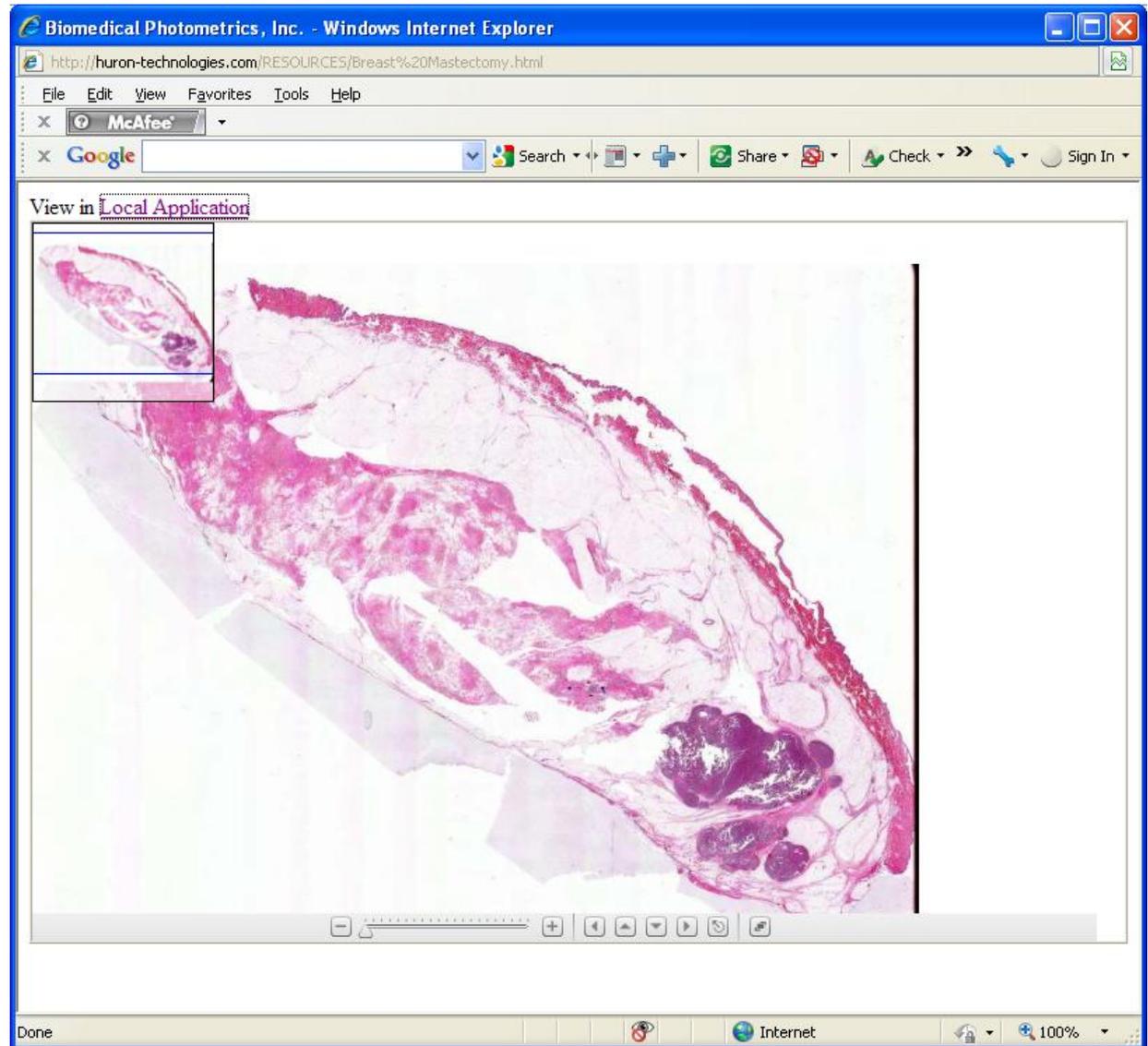
Exceptional SNR coupled with very high throughput



(Left) 3D image of the human cornea. **(Right)** 2D image of healthy human cornea acquired *in-vivo* with the Ultra-High Resolution OCT 1060nm imaging system based on the P&P Optica Spectrometer. (Right) Image dimensions: 4mm x 0.85mm. Image resolution is 3 μ m axial, 10 μ m lateral. Data acquisition speed: 47,000 A-scans /s. SNR = 101 dB for 1.4mW incident on the human cornea. **Ep** – epithelium; **BM** – Bowman's membrane; **S** – stroma; **En-DMC** – endothelium – Descemet's membrane complex.



And this?

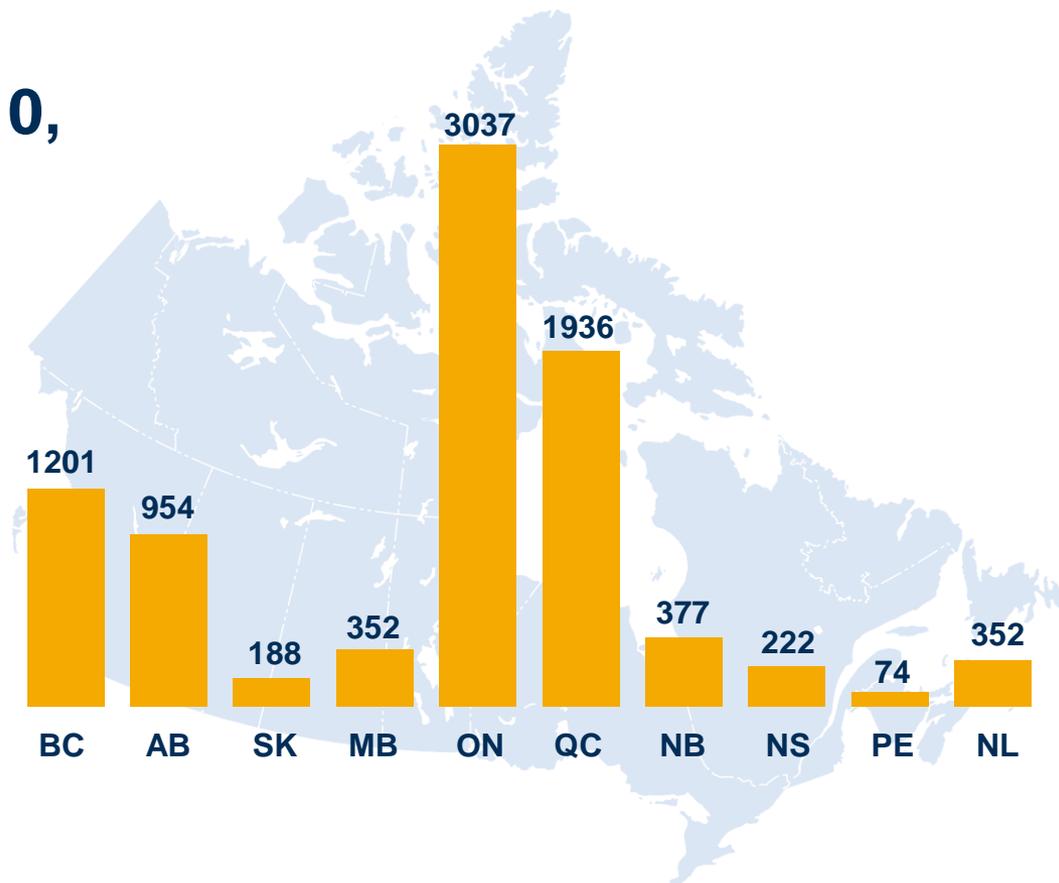




Who Are Our Clients?

NRC-IRAP worked with 8,693 SMEs* in 2009-2010, of which 2,871 received some form of funding.

- 84% have less than 50 employees
- 65% have fewer than 20 employees



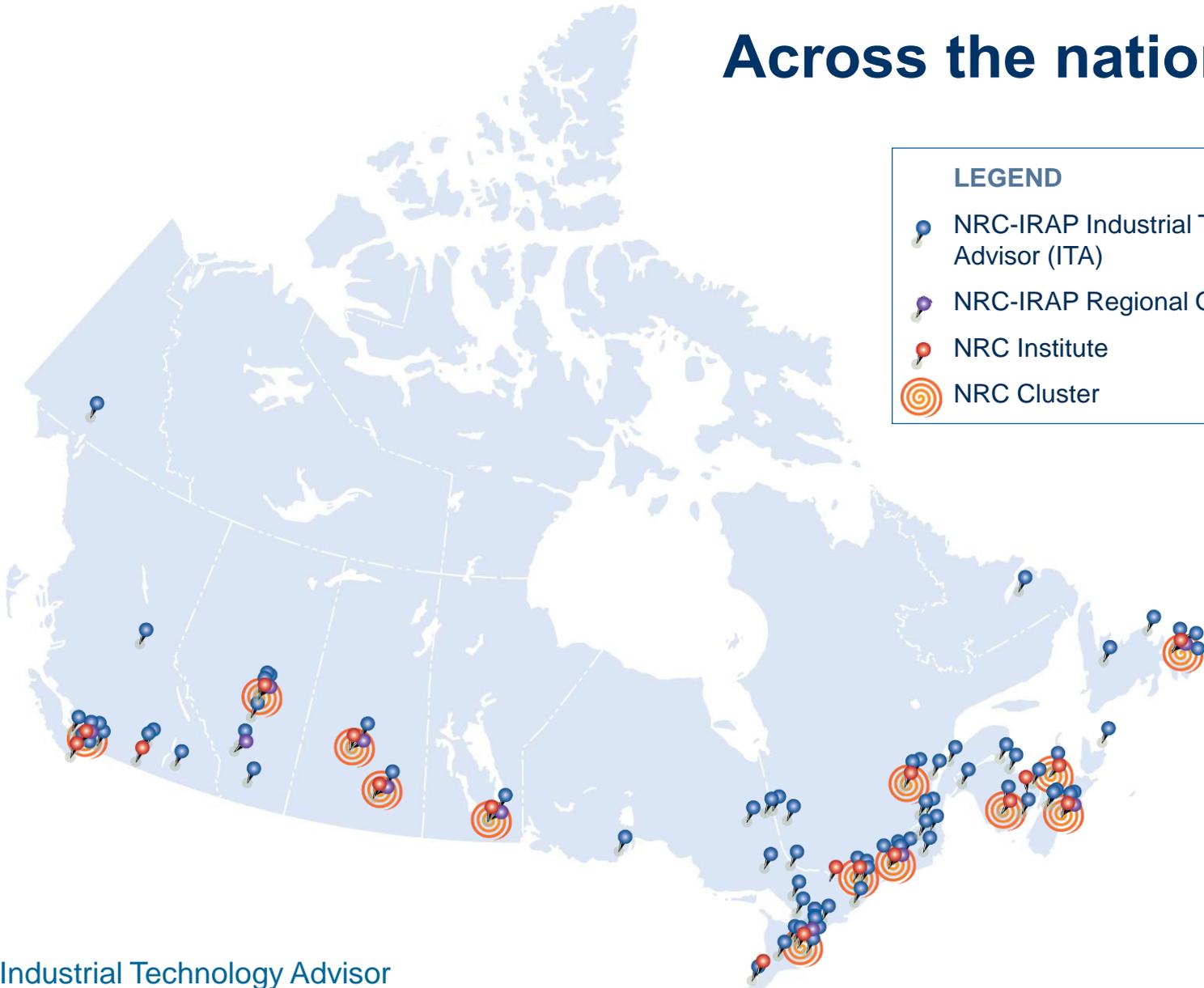
* small and medium-sized enterprises (SMEs) – Firms with 500 employees or less



Across the nation....

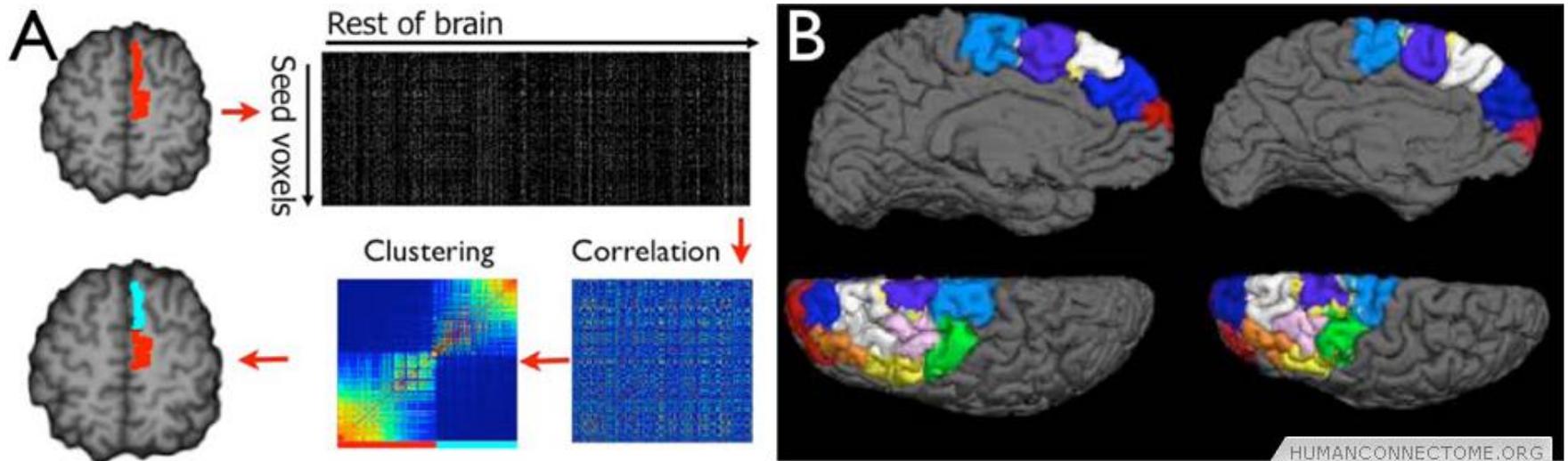
LEGEND

-  NRC-IRAP Industrial Technology Advisor (ITA)
-  NRC-IRAP Regional Office
-  NRC Institute
-  NRC Cluster



*ITA – Industrial Technology Advisor

Imaging is growing from the inside....



- Multi-Modal Data Integration from the Human Connectome Project



And at companies in Alberta....

ResolutionMD™ Mobile
Works the way you do, wherever you are.

A black smartphone displaying the ResolutionMD Mobile app interface. The screen shows a 3D anatomical model of a human skull with internal structures highlighted in orange and red. The status bar at the top indicates "ROGERS", "1:35 PM", and "48%". Below the status bar, there is a "Recent..." button and a dropdown menu currently set to "Anonymized". The bottom dock of the phone shows icons for a grid, a camera, and a home button.

To the outside

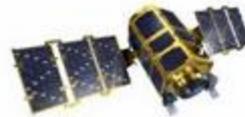


With varied spectra.....

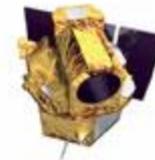
- [Home: Iunctus Geomatics Corp.](#)



SPOT4 & SPOT5



KOMPSAT-2



FORMOSAT-2



Related to their applications....



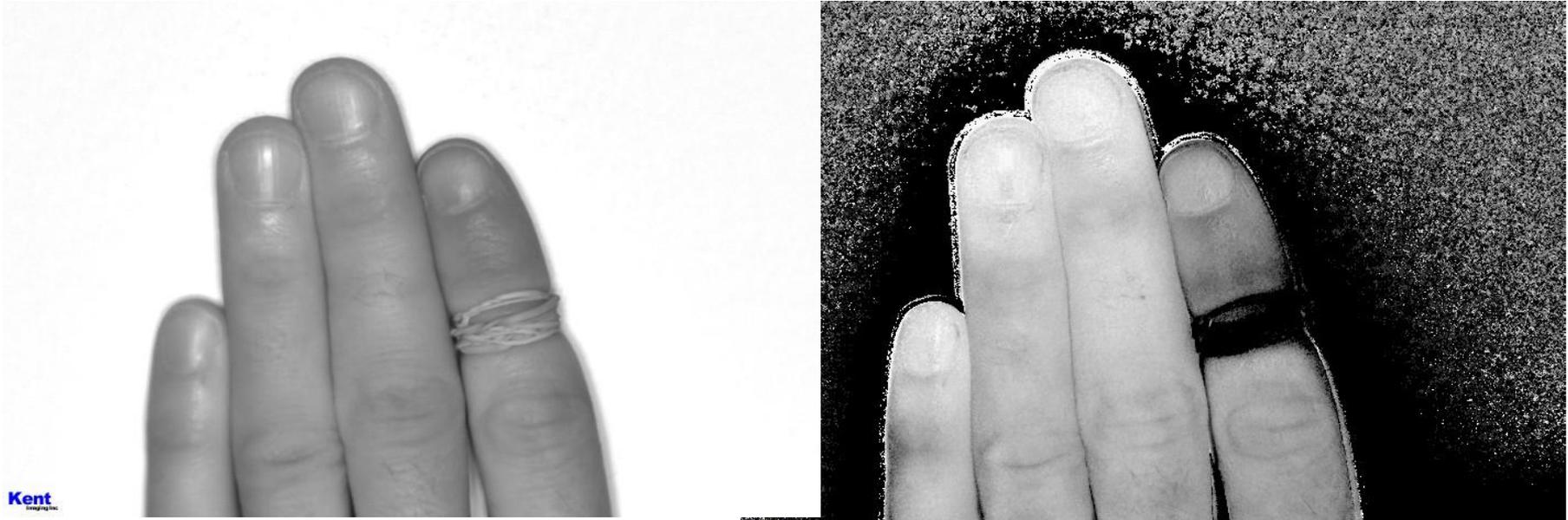
[Welcome to ITRES | Products](#)

Mining in diverse world locations.....



- Solutions for the Aggregate Industry
- Accuas GeoVu Suite

Trends in data sources?



- More spectra, more frames, more applications
- Saving \$ in other sectors
- [Kent Imaging - Markets](#)

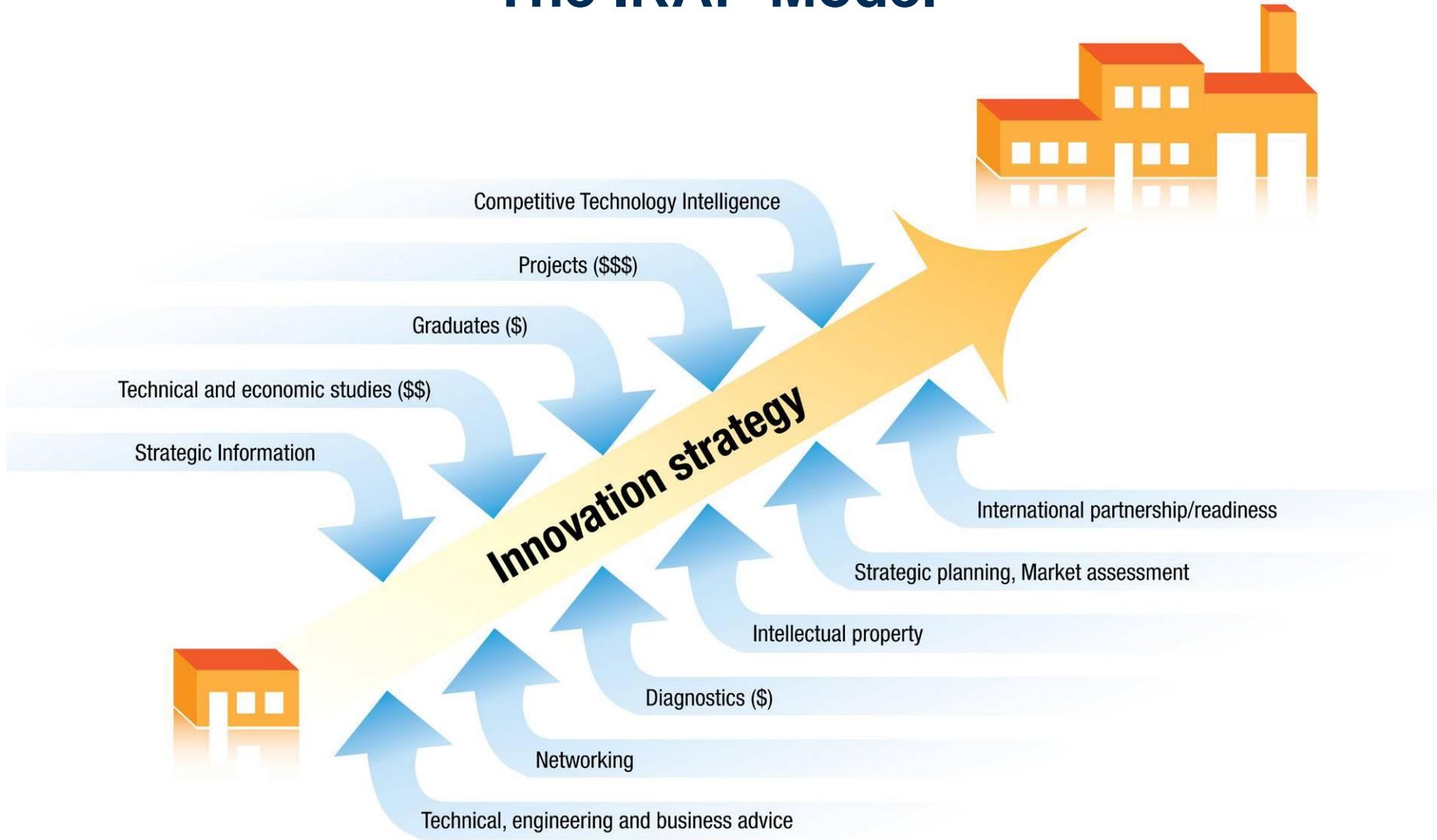
Trends in Processing capabilities.....

- More memory, more Tera/Peta/Exa – Flops of CPU / GPU
- [Acceleware Corp. | Multi-Core Software Solutions](#)

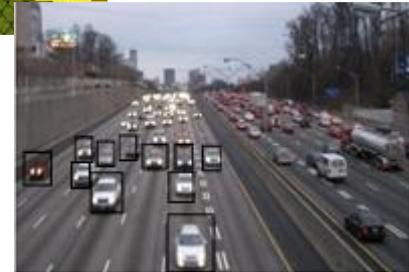




The IRAP Model



Other imaging spaces you may not expect...



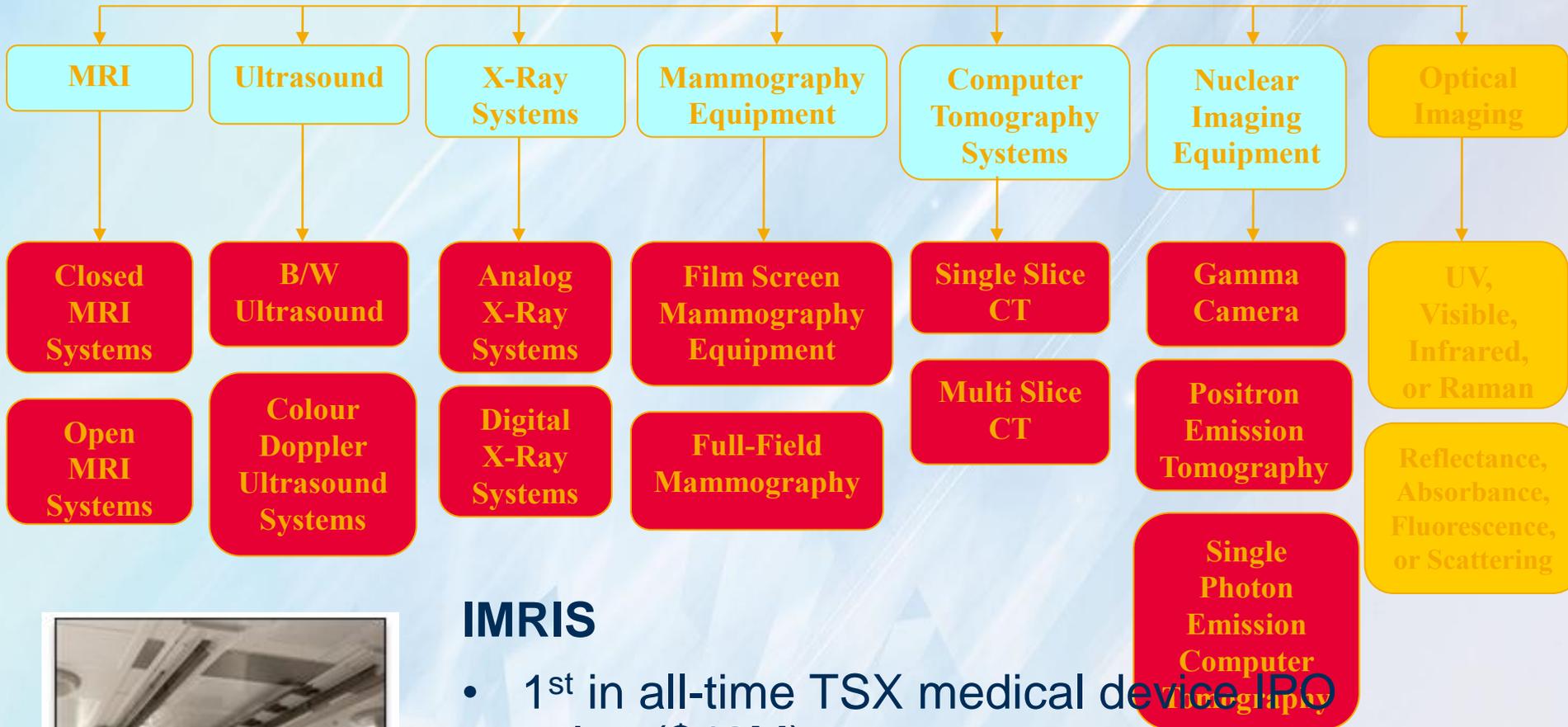
- The transportation & security sector
- [Analytics](#)
- [Aimetis: Home: Solutions: Solutions by Industry](#)

And some that you already know.....



- And the company is in Alberta
- [CDL Systems Ltd.](#)

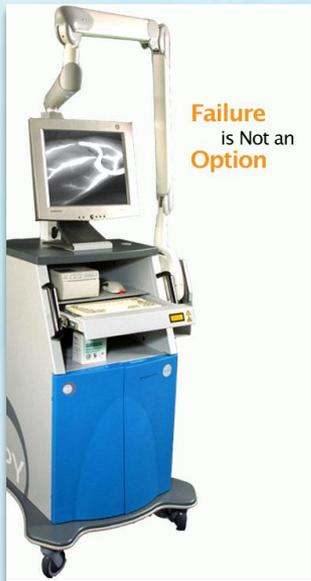
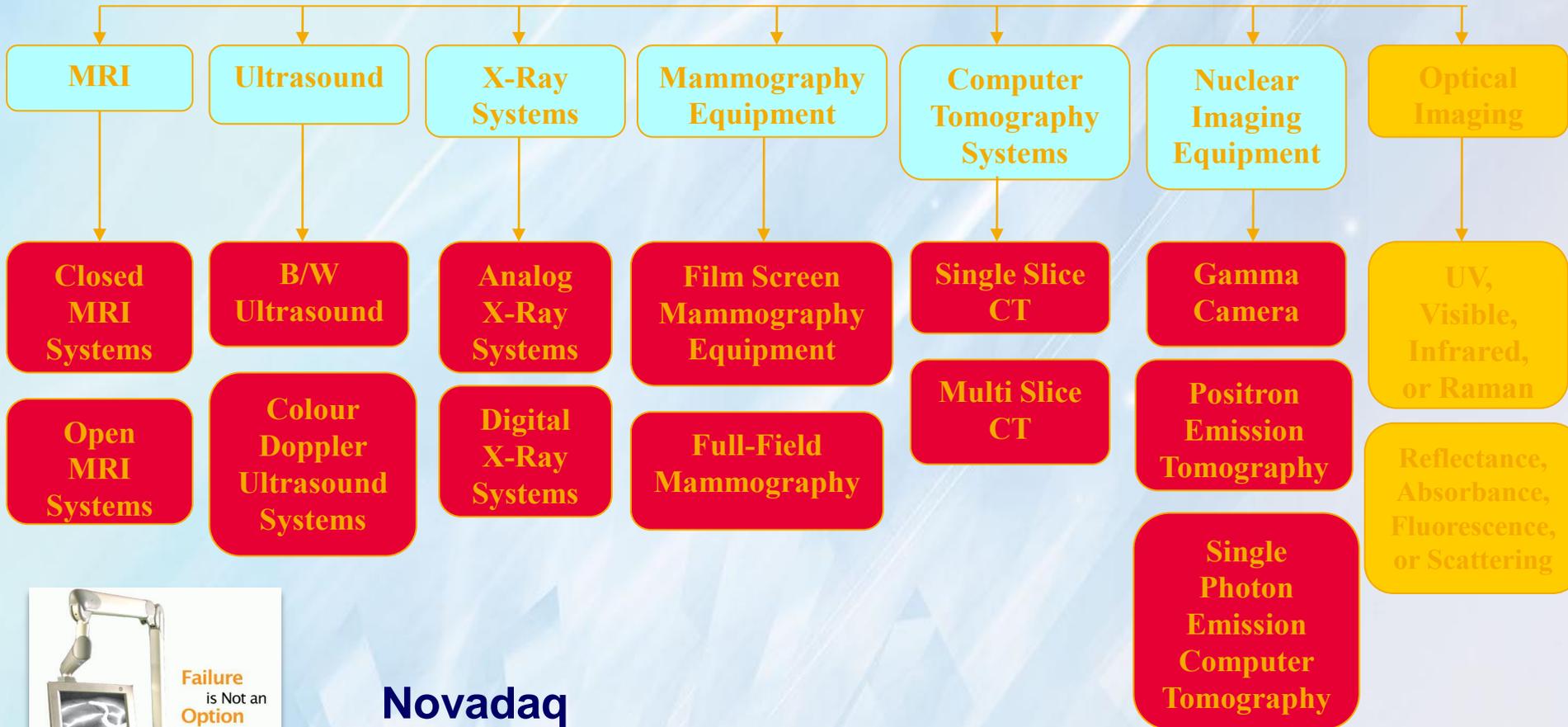
Guess the Technology



IMRIS

- 1st in all-time TSX medical device IPO value (\$40M)
- 85 M\$ sales booked as of Oct 2009 (worldwide)
- Only instrument of its kind in the world
- over 135 highly skilled employees

Guess the Technology



Novadaq

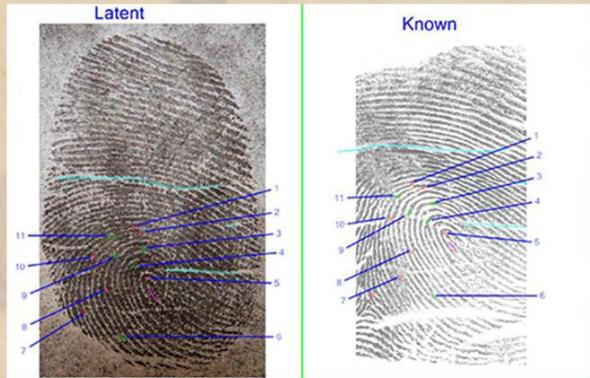
- 3rd in all-time TSX medical device IPO value (\$25M)
- 70+ highly skilled employees
- Only NRC spin-off company to be listed in *Canadian Business* magazine's Tech 100, 3 years running
- Sales in over 20 countries



Other imaging apps you may not expect....

- Gaming? Sure!
- An imaging system that monitors the cards and play at the casinos....
- [Tangam - TableEye21](#)

Another you've seen on TV.....



EFFICIENT COMPARISONS:
TWO IMAGES SIDE BY SIDE
THUMBNAILS FOR EASY FILE ACCESS
CORRECTLY SCALED IN SECONDS
SYNCHRONIZED ZOOMING

EASY EXHIBIT PREPARATION:
EASY TO USE ANNOTATIONS
ADD A BORDER
COPY TO CLIPBOARD
PASTE INTO PRESENTATION

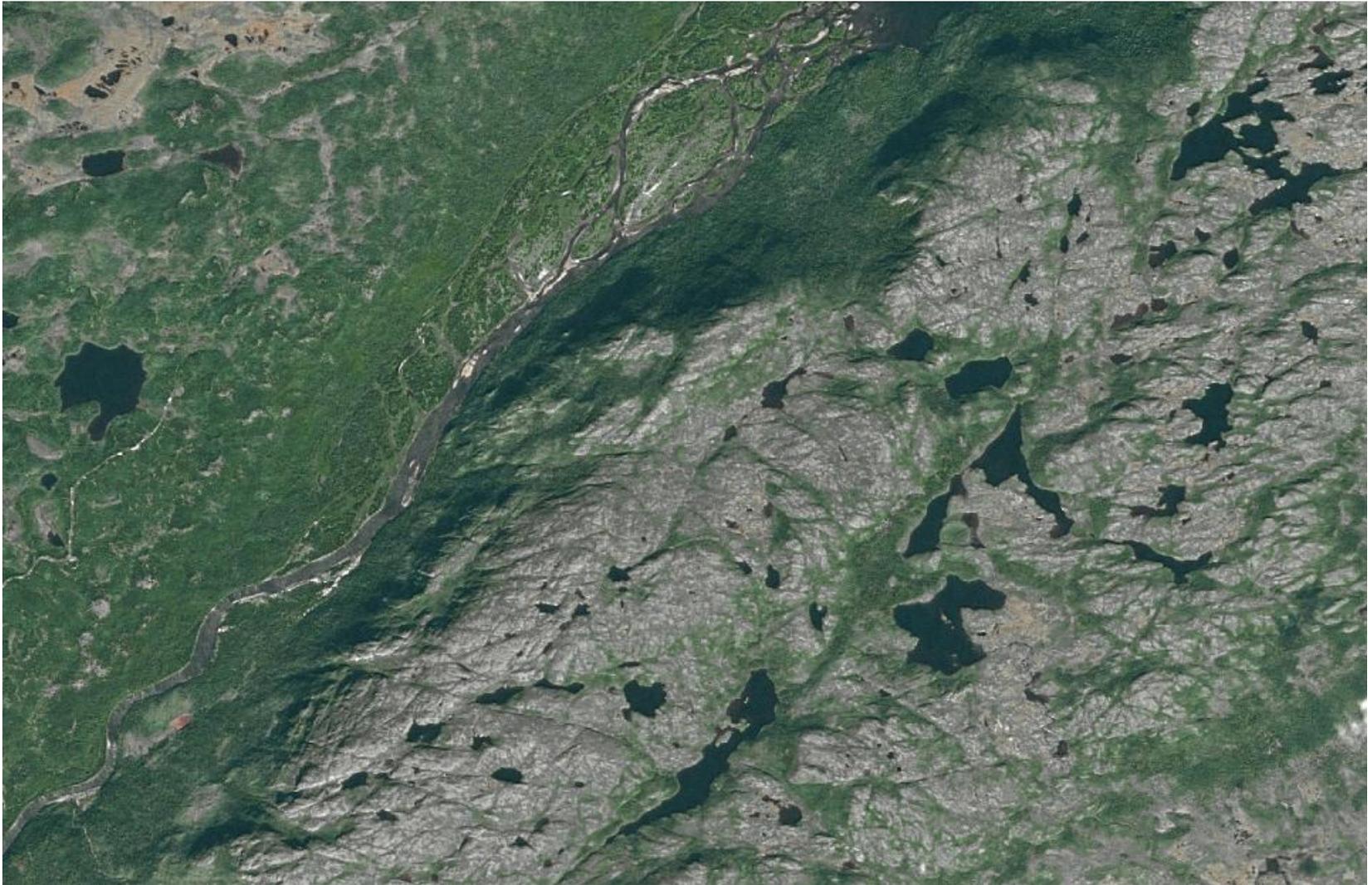
- [Brochure - CSIpix](#)

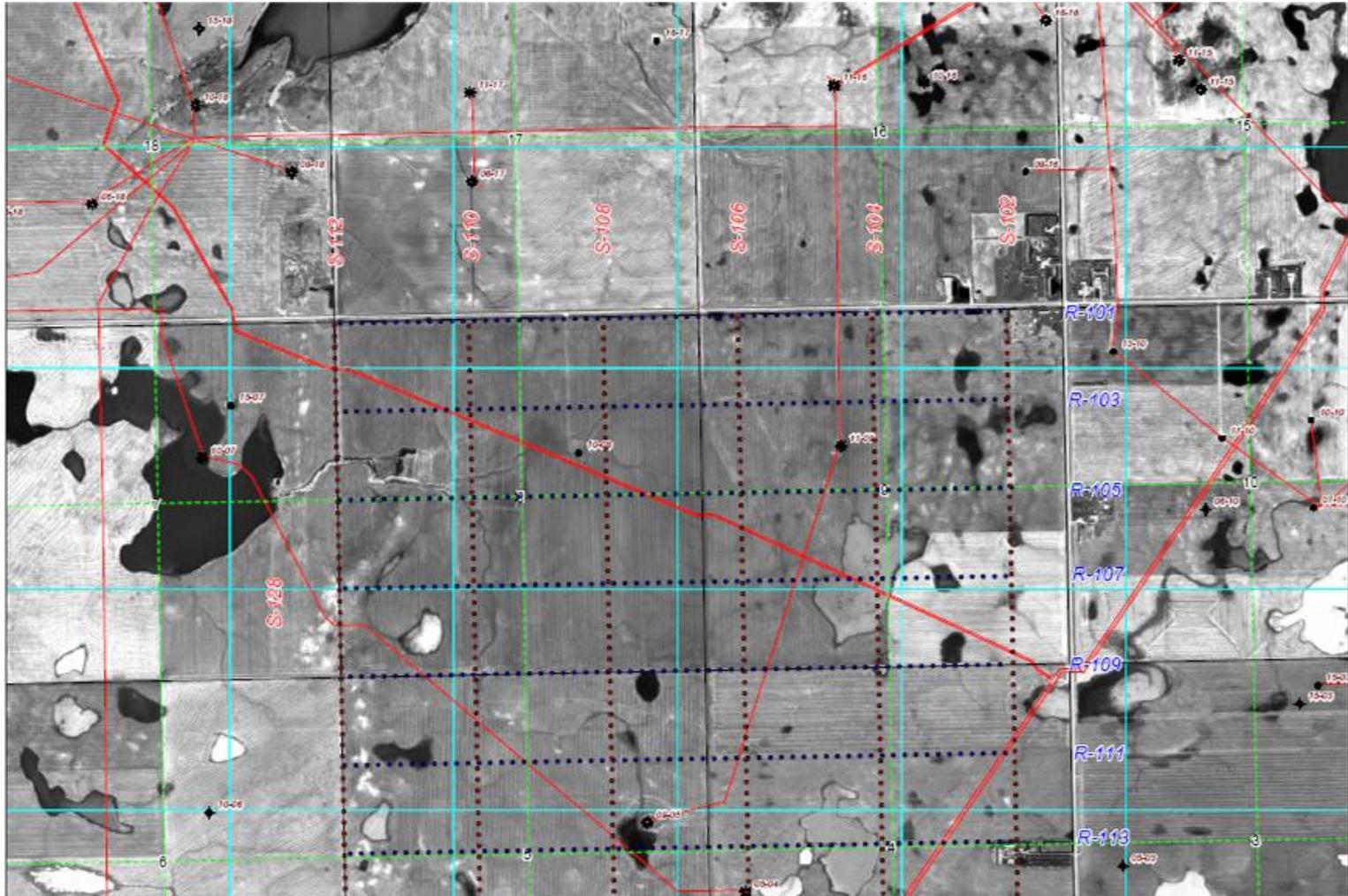
More Images.....



Pipeline Planning







Seismic Survey – Oil & Gas



Questions & Discussion

What do you see as the threads that tie all these areas together?

Who does what?

When, where, why and for how much?

How does the Amethyst fit?



NRC Industrial Research Assistance Program (NRC-IRAP)

*Supporting small- and medium-sized enterprises
grow **stronger**, grow **faster**, grow **bigger**
through innovation and technology*



National Research
Council Canada

Conseil national
de recherches Canada

Canada 



1

Working with IRAP - Eligibility

If your company is:

- For profit
- Located in Canada
- Incorporated
- 500 employees or less

Your company has basic eligibility for IRAP support



2

IRAP at your company's site

An ITA will visit you at your location

- **To better understand**
 - Your business structure (ownership, management, etc.)
 - Your business strategy
 - Nature of activity (products/services, clients, competitors, R&D, etc.)
 - Available resources (human, material, etc.)
- **You will learn**
 - How we can contribute to achieving your business goals
 - Our variety of services
 - The trusting relationship
 - Conditions of contribution



3

Services

- Innovation-related services
- NRC-IRAP network of organizations
- Strategic, competitive information
- Linkages with potential partners in Canada and abroad
- Financial support for hiring a recent graduate
- Financial support for innovation projects



4

Project Definition

- Definition of the business opportunity
- Identify clients' needs
- Decision 'buy' vs. 'develop' technology
- Define project, objectives, resources, deadlines, etc.



5

Proposal for IRAP Financial Support

Your proposal must:

- Provide an overview of your business
- Contain a clear description of the activities necessary to achieve your project
- Identify clear and measurable objectives
- Elaborate a realistic budget that is coherent with your project's activities and resources
- Identify other sources of financing, if necessary

Your ITA will provide you with an online template



6

Proposal evaluation

- Understanding of business opportunity
- Evaluation of the firm (its capabilities)
- Evaluation of the project content and technical risk
- Approval



7

Project Management and Follow-up

- Support throughout the life of your project
- Support to manage change
- Follow-up
- Impact and benefits to Canada



A Successful Relationship

“NRC-IRAP was the first partner to commit financially to Accedian Networks,” Ostiguy says. “They were our first sounding board for the business plan.”

The NRC-IRAP investment allowed the firm to create its first proof of concept and to secure \$4 million worth of venture capital investments.

Patrick Ostiguy

Founder Accedian Networks Inc.





A Successful Relationship

“The fact that NRC-IRAP believed this will be successful – that was a very important validation. We engineers can dream about things, but there has to be a market reality. Obviously if NRC-IRAP contributes, that is a strong vindication of your idea.”

NRC-IRAP's contribution helped to finance D-TA Systems' market research and fast-track product development, creating five technical jobs along the way.

Angsu Rudra
CEO, D-TA Systems



D-TA Systems, Ottawa, On



A Successful Relationship

“NRC-IRAP offers significant benefits and flexibility to our company and the industry as a whole. ”

NRC-IRAP funded a project for the design of an ultra-long term, live-holding mussel storage system.

Richard Allen,
Vice President, Allen’s Fisheries Ltd.



Allen's Fisheries Ltd., Benoit's Cove, NL