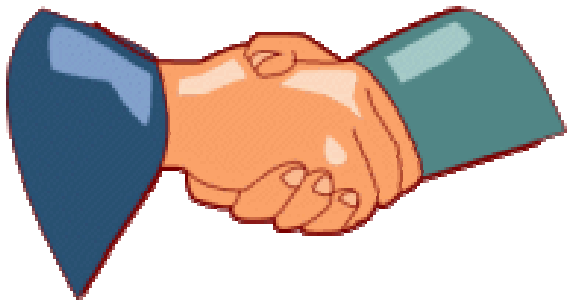
R&D Partnerships



Dr Yeoh Lean Weng
Deputy Director (Command, Control & Intelligence)
Deputy Director (Communications)
Defence Science & Technology Agency
Republic of Singapore

The World Has Changed

Battlefields Have Changed

Support for US puts S'pore high on Al-Qaeda hit list

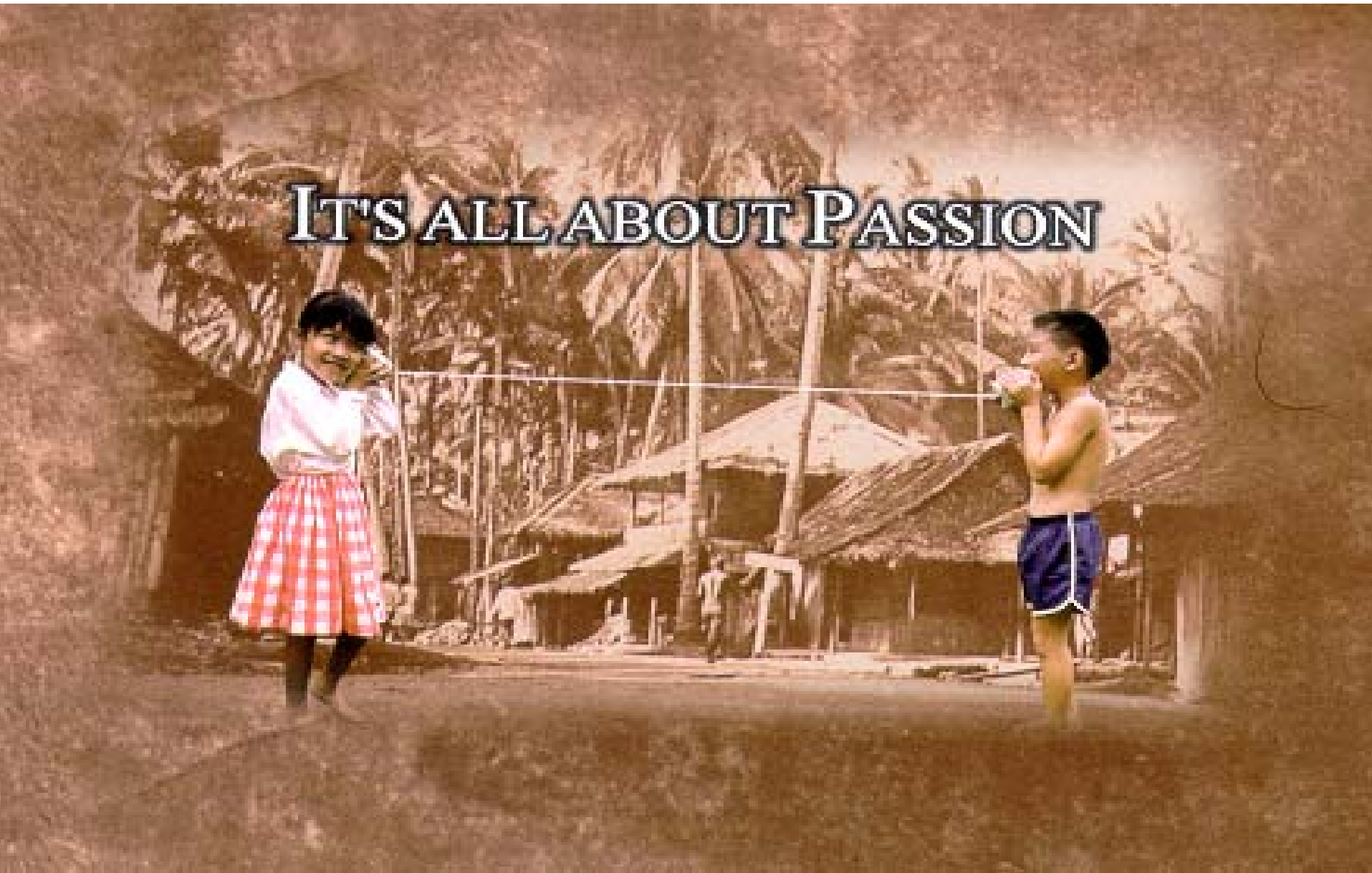
A grave threat but Singapore can respond decisively, says Tony Tan; Singapore is committed to US war against terrorism

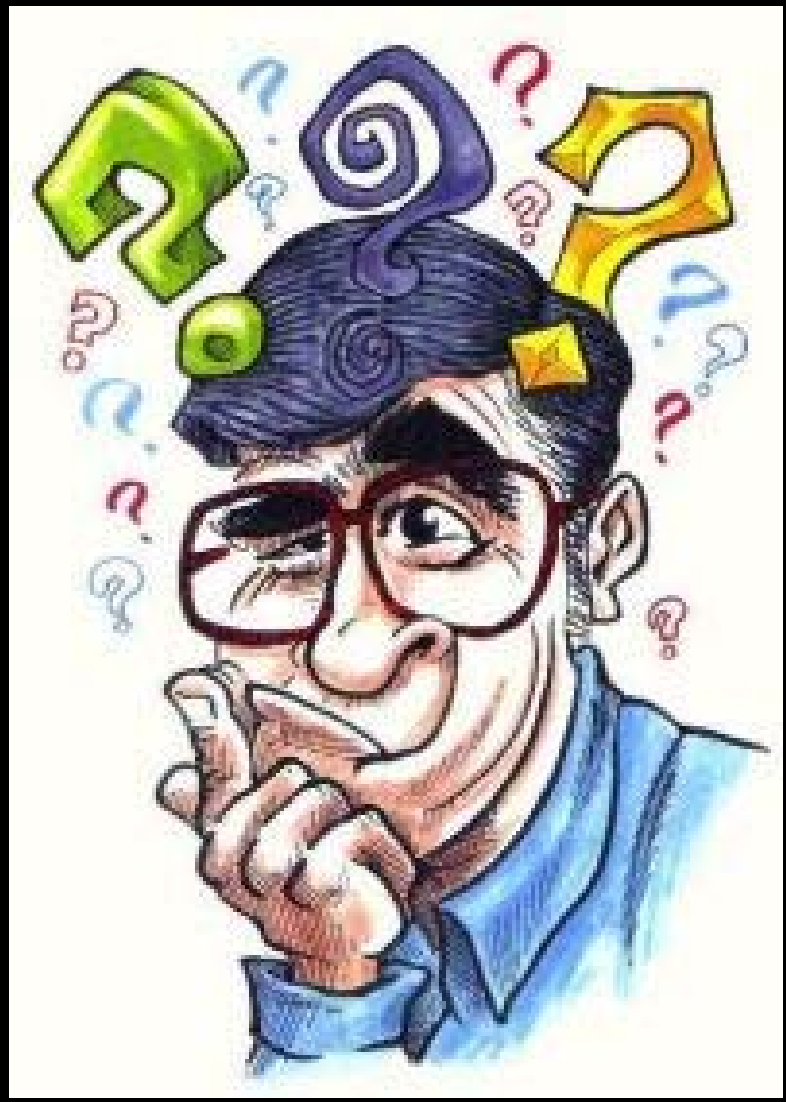
S'pore still a target

IN the wake of the Iraq war and recent terrorist attacks in Saudi Arabia and Casablanca, Deputy Prime Minister Tony Tan warned that Singapore is still a potential target for terrorists.

He said this after visiting the Defence Science and Technology Agency and DSO Laboratories on Friday, to see some of the latest gadgets that Singapore's experts have designed to combat terrorism. This is a test kit to detect Ricin, a deadly poison which terrorists may use in a bio-chemical attack. – *Channel NewsAsia*

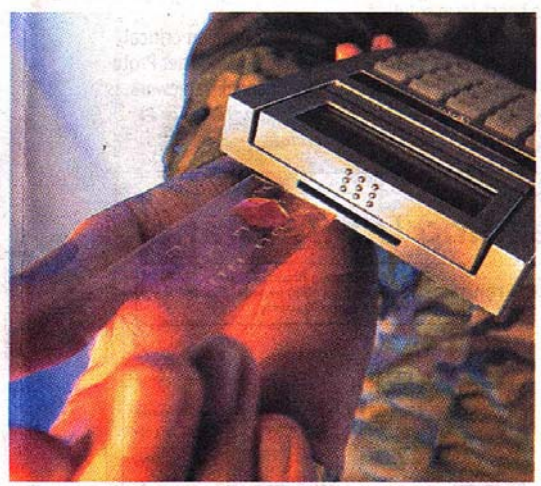
Technologies Have Changed





What is clear is the future is unclear

Transformation



thestar online

e-Cop.net
Proactively protecting and managing your network security, Round-The-Clock

TechCentral search for HeadLine | Product News | Go!

Home > Tech News

- Tech News
- In.Tech
- Handhelds
- Computers
- Software

Thursday, April 17, 2003

Singapore uses military technology to combat SARS

Local scientists unravel Sars genome

By Kennet[illegible]

ON THE CARDS:

Chip that detects biological hazards

The power of a labo-ratory in[illegible] device [illegible] While portable chemical detection kits have been around for a while, t[illegible]re is the last four years. A proto-type should be out within the next six months, but the

Develop New Capabilities to Counter Threats

CNN.com

SEARCH The Web | CNN.com | Search

- Home Page
- World
- U.S.
- Weather
- Business at CNNmoney
- Sports at SI.com
- Politics
- Law
- Technology
- Science & Space
- Health
- Entertainment
- Travel
- Education
- Special Reports

Visit the international edition. Click here

SERVICES

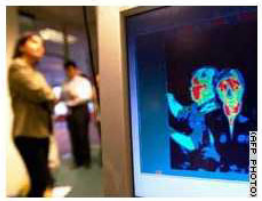
Singapore looks for SARS hot-heads

Thursday, April 17, 2003 Posted: 4:21 AM EDT (0821 GMT)

SINGAPORE -- Singapore has turned up the heat on passengers arriving from SARS-affected countries at its international airport.

Thermal imaging scanners are now being employed to screen for passengers who may have a fever -- one of the major symptoms associated with the SARS virus.

Originally intended for military use, the Infrared Fever Sensing System has



The new thermal imaging system in action. A red glow could indicate a passenger with a high fever.

RFID IS THE FUTURE – THE FUTURE IS *NOW*
RFID Journal goes live in Chicago, June 11-13. Join us.
LEARN MORE

NEWS

Singapore Fights SARS with RFID

Hospitals are tracking visitors, patients and staff, so they can trace all of the people with whom a suspected SARS patient has had contact.

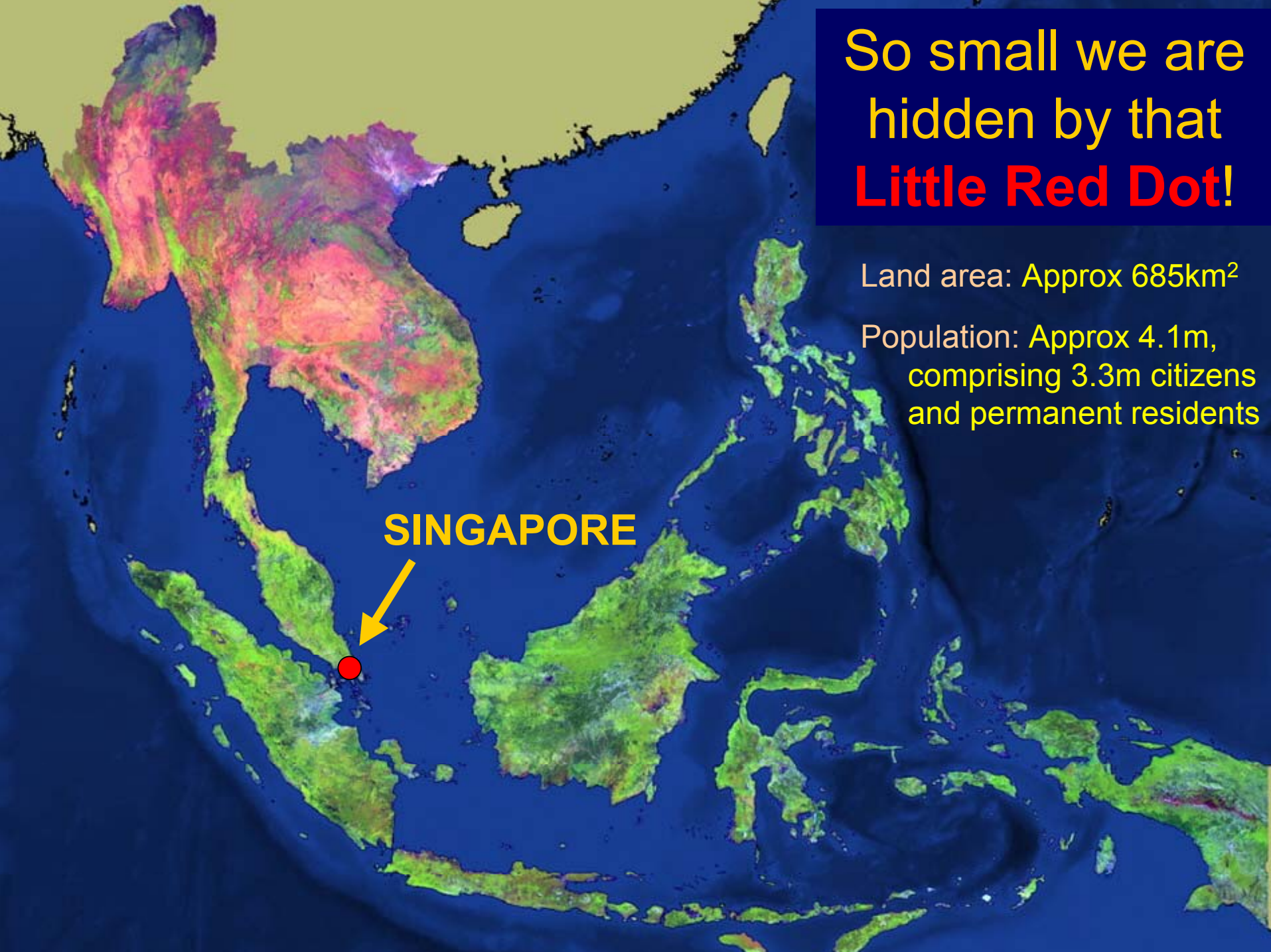
June 4, 2003 - Radio frequency identification is playing a role in the global fight to contain Severe Acute Respiratory Syndrome, or SARS. Two hospitals

The Future of Business

IN THIS groundbreaking series of monthly reports, Accenture's RFID experts spell out how silent commerce can transform manufacturing, add intelligence to products and assets, and optimize supply chains.

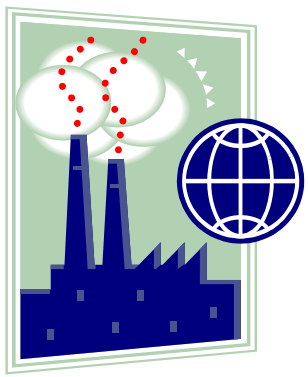
> Read this month's report

SPECIAL SPONSORED SECTION


So small we are hidden by that Little Red Dot!
Land area: Approx 685km²
Population: Approx 4.1m, comprising 3.3m citizens and permanent residents
SINGAPORE

Leveraging on Partners

- Strategic Partners
- Industries
- Academia



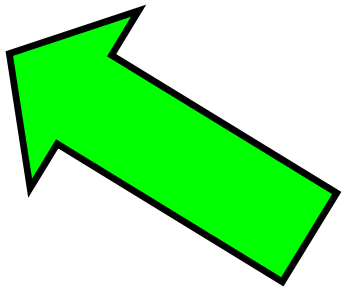
DSTA

DSTA is the national authority for defence science and technology.

Defence Technology Ecosystem

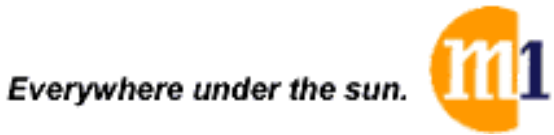
Approach to Technology Capability Build-up

Buy



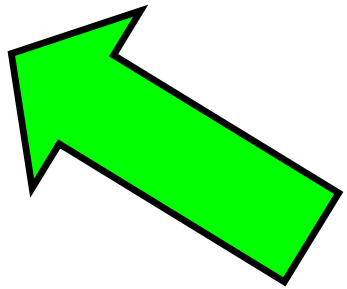
DSTA

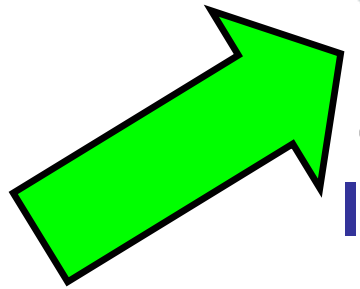
Buy Off-The-Shelf

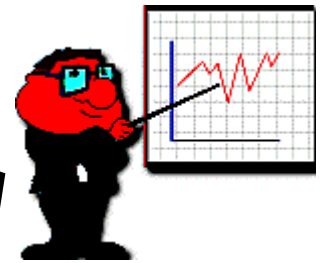


Approach to Technology Capability Build-up

Buy





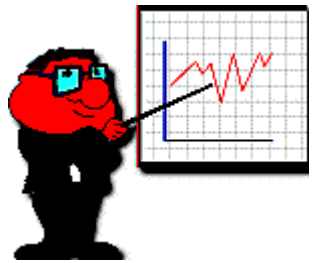


Invest in R&D

DSTA

Approach to Technology Capability Build-up

Buy



Invest in R&D

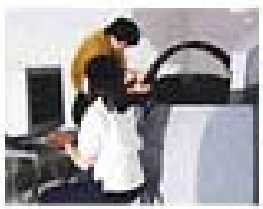
DSTA

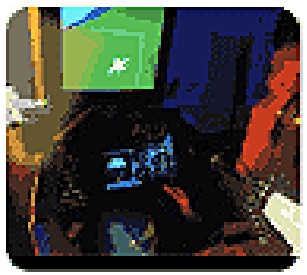
Build up local industry

Singapore Technologies Electronics

DSTA

- 500 engineers working on C4I areas
- Work with DSTA Engineers in:
  - Concept Exploration
  - Experimentation
  - “Proof-of-Concept” technology demonstrators

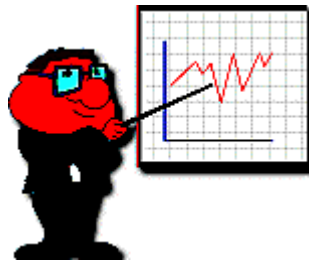




Singapore Technologies Electronics

Approach to Technology Capability Build-up

Buy



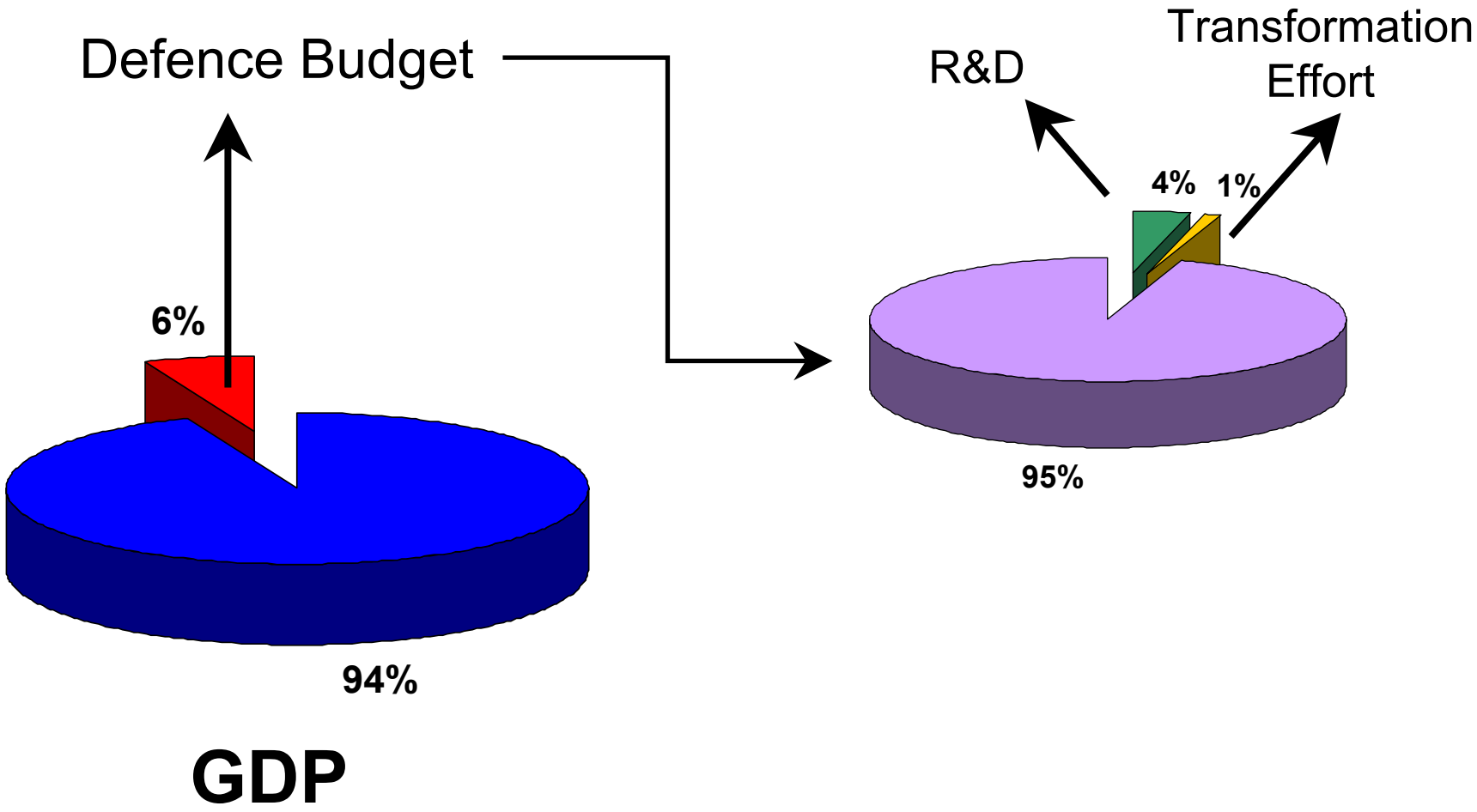
Invest in R&D

DSTA

Work with local and global Partners

Build up local industry

Money Matters



Experimentation

SAF Centre for Military Experimentation (SCME):

- Virtual Battlelab
  - Explore new operational concepts through Modeling & Simulation
- C4I Lab
  - Experiment with new C4I technologies
- Command Post of the Future (CPoF) Lab
  - Explore transformational C2 concepts

Battle lab to help reshape SAF war muscles

Centre being set up to explore new battle concepts and assess how IT can help armed forces win in modern combat

By DAVID BOEY

THE Singapore Armed Forces (SAF) is setting up a Centre for Military Experimentation later this year to spearhead efforts at assessing how information technology can help

world, especially Net-based technology.

Details of the Centre for Military Experimentation were revealed yesterday by Brigadier-General Jimmy Khoo, Mindef's Future Systems Architect

hp invent

selected to design the CPoF infrastructure

Research & Development

DSO National Laboratories

- Affiliate of DSTA
- More than 800 Scientists & Engineers
- Single Largest R&D organisation in Singapore
- Focuses on developing secret edge technologies

Local Research

Universities / Research Institutes

National University of Singapore (NUS)

Nanyang Technological University (NTU)

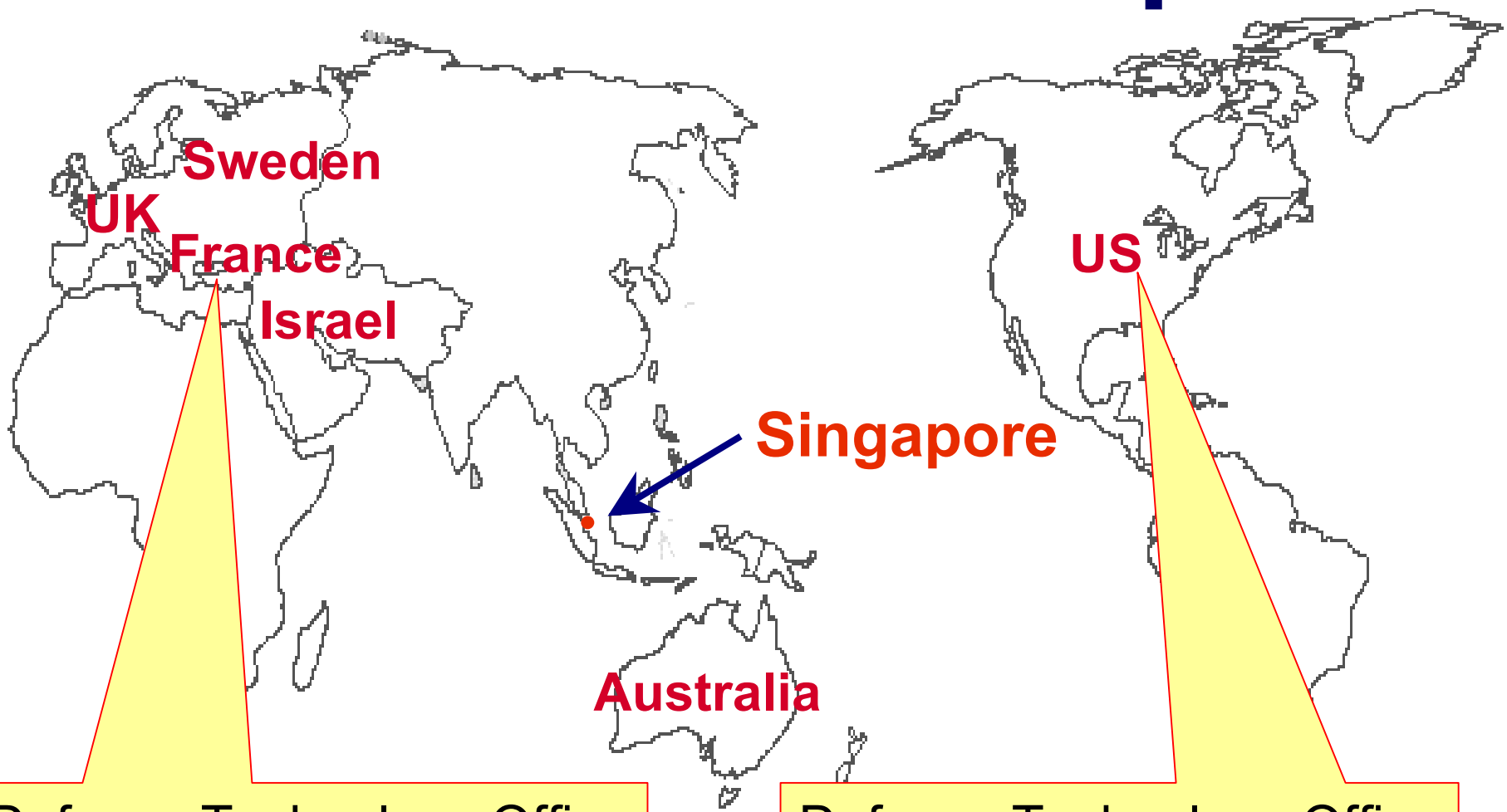
Temasek Laboratories

- Created in both NUS & NTU

Temasek Defence Systems Institute (TDSI)

- Joint Collaboration between NUS and US Naval Postgraduate School

Overseas' Partnerships



Defence Technology Office (Europe)

Defence Technology Office (North America)

DTO Contacts

- **Lim Seng**
  Defence Technology Office (Europe), DSTA
  Ambassade de Singapour
  12 Square de l'Avenue Foch
  75116 Paris, France
  Tel: (33) 144 17 9271 Fax: (33) 144 17 9275
  Email: limseng@wanadoo.fr

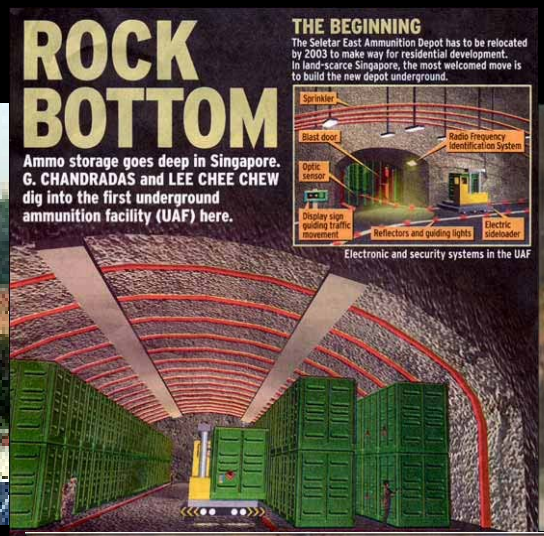
- **Tan Peng Yam**
  Defence Technology Office (US), DSTA
  Embassy of Singapore
  3501 International Place N.W.
  Washington D.C. 20008
  United States of America
  Tel: (202) 537 3100 Fax: (202) 363 2029
  Email: tpengyam@aol.com

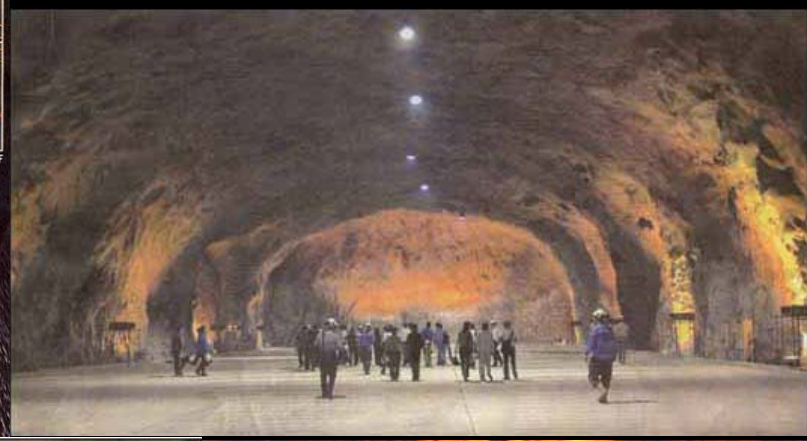
PC Games

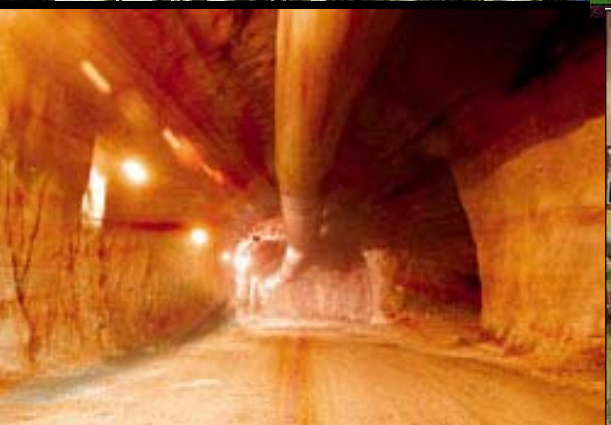
Collaboration with US Army and Institute for Creative Technologies

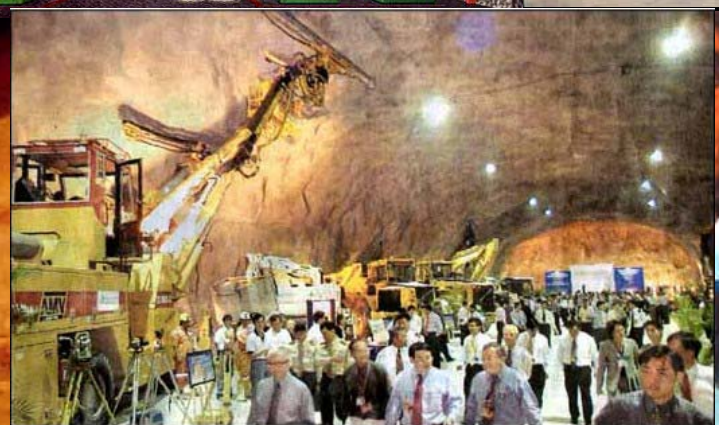
Underground Ammunition Facility (UAF)

Collaboration with US









Joint Research Laboratory

Collaboration between ONERA, Supélec, DSTA and NUS

THALES Technology Centre Singapore

THALES Technology Centre S'pore (TTCS)

- Established on 31 May 2003
- 1st in Asia; 4th Worldwide (UK, France, Netherlands)

THALES

◆Research pact with France

THE first day of the Asia Pacific Conference yesterday saw France and Singapore lift their already close defence relations to a new plane with the signing of an agreement for joint studies

years of talks between France and Singapore on the way defence technology research between the two countries could be strengthened.

Some $2 million will be

rector of international fairs at DGA, the French mament agency, said: "I no secret that France's th biggest partner in defe research is Singapore, ar on the French side, the

SINGAPORE RESEARCH AND THE FRENCH CONNECTION

THE presence of top-tier defence officials from France at the Asia Security Conference has provided a useful backdrop for Singapore and France to boost joint research with two agreements.

The Defence Science and Technology Agency (DSTA) and the Paris-based defence giant, Thales

CAP Vista

Subsidiary company of DSTA

Manages the S$20m set aside by DSTA to prospect for technologies in the private sector

Two biomed firms get funds under new scheme

Singapore to fund technology initiatives

ROBERT KARNIOL *JDW Asia-Pacific Editor*
Bangkok

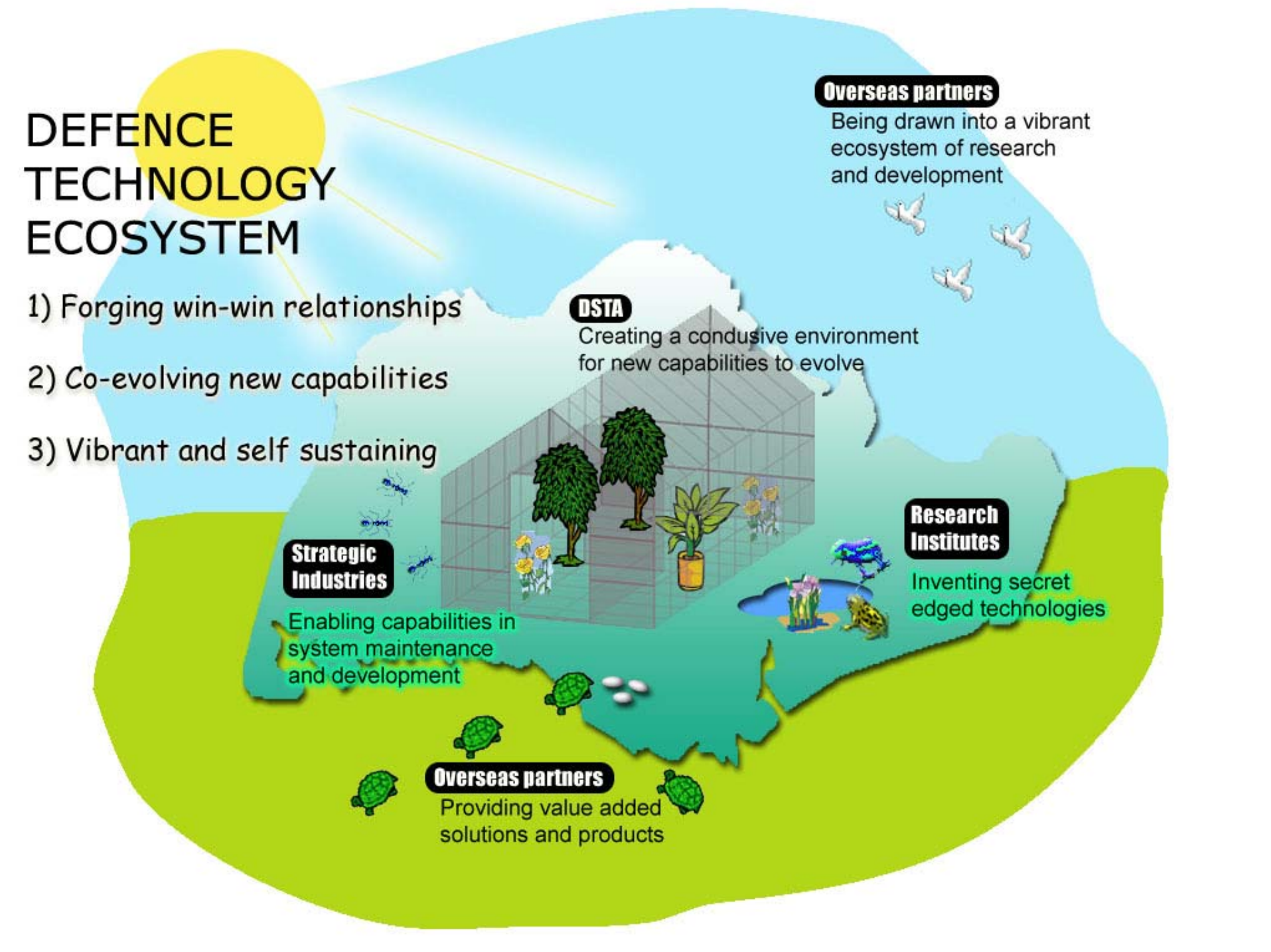
Mindef seeks ideas for military use

Funding available to SMEs to develop ideas in infocomms, satellite technology

By **David Boey**
THE Ministry of Defence i
on the prowl for new idea
and on its hit list are sma

Defence agency to fund start-ups

Small companies can get backing even if not into military research; technologies can be adapted for defence purposes


DEFENCE TECHNOLOGY ECOSYSTEM
1) Forging win-win relationships
2) Co-evolving new capabilities
3) Vibrant and self sustaining
Overseas partners
Being drawn into a vibrant ecosystem of research and development
DSTA
Creating a condusive environment for new capabilities to evolve
Strategic Industries
Enabling capabilities in system maintenance and development
Research Institutes
Inventing secret edged technologies
Overseas partners
Providing value added solutions and products

"Coming together is a beginning, staying together is progress and working together is success."

- Henry Ford

Thank You