

PRESS RELEASE

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A*STAR ENVISIONS WIRELESS LIFESTYLE AT COMMUNICASIA 2005

Imagine a mobile phone that does all manner of tech tricks from monitoring your home remotely to sharing high quality audio and video, or a server that instinctively fits a new playlist of songs into your portable player's remaining storage without intervention. It's a world of promises at the Agency for Science, Technology and Research (A*STAR)'s "*Wireless Lifestyle – An A*STAR Experience*" exhibition in CommunicAsia 2005, at the Singapore Expo Hall 5, booth # 5H3-01 between June 14 – 17 June 2005.

Three research institutes from A*STAR will demonstrate how their innovative and cutting-edge infocomm technologies will revolutionise the home and office in the wireless age.

"We are at the dawn of an exciting new age of wireless data," said Mr Boon Swan Foo, A*STAR's Managing Director and Exploit Technologies Pte Ltd's Executive Chairman. "Wireless technology is not limited to the IT-savvy consumers. The convergence of wireless capability with everyday products will revolutionise our lifestyles. A*STAR has the capability to realise that vision by paving the way for smoother integration of wireless applications to enrich people's lives at work, at home and at play."

"A*STAR's *Wireless Lifestyle* exhibition visualises our concept of how cutting-edge technologies available from A*STAR can be integrated into the daily lives of consumers. We hope to encourage companies to take up and integrate these intellectual properties into new products and services, and thus create an even greater myriad of applications." said Ms Emily Tan, Senior Vice President of Exploit Technologies' Science and Engineering Division and Incubation and Spin-off Management Division.

Simulating a day in the life of a typical busy household, *Wireless Lifestyle* shows how individual members of a family embraces cutting edge infocomm technology to bridge distance, work and social setting to maintain a close knit family unit. (Please see Appendix 2 for details).

The exhibit highlights are listed below.

Institute for Infocomm Research:

Advanced Video Codec (H.264)

- Hot next generation MPEG4 Video Codec.
- Up to 50% more compression than current video codecs.
- Can store twice as much, transmits at half the required bandwidth compared to current video codecs, while achieving similar, if not higher, viewing quality.

Advanced Audio Zip (AAZ)

- Upcoming next generation MPEG4 Scalable to Lossless Standard Audio Codec.
- High quality music with up to 3x compression and reproduces exact CD quality. Great for backups.
- Same quality fidelity as, and backward compatible to, AAC at low bitrates. No re-encoding needed compared with other lossless formats.

Radio Frequency Identification (RFID)

- Location tracing – tracing movement of personnel, monitoring time spent in specific locations
- Contact tracing – tracking contact history of personnel, ie. Persons met, date and time of meeting, duration of contact.

TrustQuery Digital Rights Management System

- Provides a high-level of confidence that the query results from the client come from the “trusted” sources and service providers.
- A Query system that sits besides the enterprise and service provider systems to provide additional low-overhead meta-data.
- Compatible with existing databases and easy to integrate.

Data Storage Institute:

Numida – A Wireless Secured Storage Device

- Battery powered mobile storage device.
- Connects via standard wireless interfaces such as WLAN 802.11b/g.
- Discovers and mounts storage device as a hard drive on Windows with an optimised high-speed file system.

Institute of Microelectronics:

Ultra Wide Band

- Next Generation sustained high-speed wireless data transfer.
- Much higher throughput than WLAN 802.11b/g.
- Removes the need for messy speaker and video cables.

RFID Tag and Single Chip Reader

- Small size and low cost RFID with on chip antenna for niche applications.
- Single chip RFID Reader. Writer IC for low cost Reader.

RFlink

- Low power wireless transceiver with sensor interface.
- Wireless sensor networks for industrial and commercial applications.

Appendix 1: Corporate Profiles of A*STAR, I2R, DSI, IME and Exploit Technologies

Appendix 2: Wireless Lifestyle – An A*STAR Experience

End

Appendix 1: Corporate Profiles

Agency for Science, Technology and Research (A*STAR)

A*STAR's mission is to foster world-class scientific research and talent for a vibrant knowledge-based Singapore. The Agency comprises the Biomedical Research Council (BMRC), the Science and Engineering Research Council (SERC), the A*STAR Graduate Academy (A*GA), the Corporate Planning and Administration Division (CPAD) and a commercialisation arm, Exploit Technologies Pte Ltd (ETPL).

Exploit Technologies Pte Ltd

Exploit Technologies is the commercialisation arm of A*STAR with the charter to identify, protect and exploit promising intellectual property (IP) created by the research institutes under A*STAR. This includes facilitating the IP management process (i.e. the protection of inventions through patents and copyrights etc), analysing the strength of our IP and the market that they could serve, and working with companies to commercialise the technologies.

(Website: www.exploit-tech.com)

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The **Institute for Infocomm Research (I²R)** was created through the merger of the Institute for Communications Research (ICR) and the Laboratories for Information Technology (LIT). I²R integrates the R&D strengths of ICR and LIT, bridging the world of communications and information technology to develop holistic solutions across the ICT value chain. The Institute's research capabilities are in wireless and optical communications, and information technology and science. We seek to enable technologies and processes that will drive new and enhanced services for Singapore's knowledge-based economy. (Website: www.i2r.a-star.edu.sg)

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The **Data Storage Institute (DSI)** was established in 1992 as the Magnetism Technology Centre (MTC), it was renamed Data Storage Institute in 1996. The research institute's vision is to be a vital node in a global community of knowledge generation and innovation, nurturing research talents and capabilities for world-class R&D in next generation storage technologies. DSI is a member of the non-profit Information Storage Industry Consortium (INSIC) of USA. (Website: www.dsi.a-star.edu.sg)

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The **Institute of Microelectronics (IME)**, founded in 1991, conducts R&D through close collaborations with universities, research institutes, and industry partners. R&D at IME covers the semiconductor technology chain, viz integrated circuit design, wafer fabrication process technology,

packaging and assembly, and reliability testing and analysis. It also conducts R&D in microsystem applications such as silicon-based micro-electromechanical-systems (MEMS). (Website: www.ime.a-star.edu.sg)

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Appendix 2: Wireless Lifestyle – An A*STAR Experience

The Family:

John and Cecilia Tan have been married for over 11 years. They have two children – Norman (their 11-year-old son), Mary (their 8-year-old daughter) and a maid. Cecilia is currently in Hong Kong on business.

John At Home

It is Tuesday morning, 7:30 a.m. John is having coffee in the kitchen, enjoying his latest collection of Fusion Jazz music piped wirelessly from a central server (**AAZ**). He needs to perk himself up for a budget pitch later in the morning.

John hooks his Portable Player to the central server and downloads the Fusion Jazz playlist of over 400 songs (**AAZ**). Much of the device's storage is already filled with photos, videos, and music. The server fits his new playlist into the remaining capacity without intervention. "Nice," John thinks.

John At Work

John powers up his laptop and the wireless hard drive (**Numida**). The drive boots up quickly. He opens the budget presentation and does a quick check. Satisfied that everything is in order, he shuts down and drives to office, listening to random shuffles of the music from the Portable Player linked to his Four-Wheeler sound system.

The presentation goes well. Numida works flawlessly. John reminds himself to buy one for Cecilia.

John sees a reminder on his phone. His home central server has sent him an SMS reminder note on the soccer game that was taped the night before. John clicks on the link and downloads a 30-second video clip of the action highlights to preview on the phone. (**H.264**).

Norman In The Mall

Norman is on his way to the shopping mall in the bus. He keeps thinking about a Canto-pop song that his friend has raved about. He needs to get it. Norman surfs the Internet on his phone and finds a promotional download available only in Hong Kong. Norman quickly sends an SMS to his mother asking her to buy the song for him. He will be the first among his friends to have that song. Cool.

Cecilia in Hong Kong

Cecilia is not surprised to receive Norman's SMS. She clicks on the download URL and makes a purchase. The digital song (**AAZ**) downloads quickly over the network. Cecilia replies to Norman's SMS with "done", a smirk on her face that she is now "Kewl" to Norman.

Cecilia checks her watch. There is some time to spare before her next meeting. She switches to the HomeCam application (**H.264**) on her mobile phone. A couple of seconds later, she sees the real time video telecast of her maid and Mary watching television. At 3 p.m.! Cecilia calls John and asks him to check on the children's homework.

AAZ is the upcoming next generation MPEG 4 scalable to lossless standard audio codec. It produces exact CD quality music with up to 3X compression for lossless, while still possible to playback lossy at any lower bit-rates. No re-encoding is needed compared with other lossless formats.

Numida is a battery powered wireless secured mobile storage device. Numida connects via standard wireless interfaces such as WLAN 802.11 b/g. It discovers and mounts storage device as a hard drive on windows with an optimised high speed file system

H.264 is the hot next generation MPEG 4 video codec. With up to 50% more compression than current video codec, it can share twice as much, transmit at half the required bandwidth compared to current video codec, while achieving similar, if not higher, viewing quality

John At Home

John has dinner and spends some time with the children. He remembers Cecilia's phone call earlier and powers up his laptop. John checks the central server on the amount of time Mary spent watching television (**RFID**). A total of 67 minutes for the day. Cecilia should be appeased with that.

Relaxed after a shower; John makes himself a drink from the bar. He instructs the central server to show the Soccer game on the LCD TV, which he had previewed earlier in the morning on the phone. He pans to the 6th action clip. A foul. Penalty! "GOAAAL" screams the commentator. The excitement is interrupted by the phone ringing. John answers.

"Have you checked the children's school bags? You are always watching your Sports programmes. And what's that you are drinking? Remember your gout condition!" (**H.264**)

John frowns, then smiles, and says "Yes Darling".

There is no escaping the invasion of technology!

RFID – can be used for location tracing eg. to trace movement of personnel, monitor time spent in specific locations. In contact tracing, it tracks contact history of personnel, eg persons met, date and time of meeting, duration of contact, etc.

TrustQuery Digital Rights Management System provides a high-level of confidence that the query results from the client comes from the 'trusted' sources and service providers.

Ultra Wide Band – the next generation sustained high-speed wireless data transfer system that removes the need for messy speakers and video cables. Much higher throughput than WLAN 802.11 b/g