

Home2015

Phase II

Wilson Lau
Senior Manager – Industry Development
whlau@i2r.a-star.edu.sg



Home2015 – Background Information



Create an interactive, adaptable environment for future home occupants based on future systems and technologies



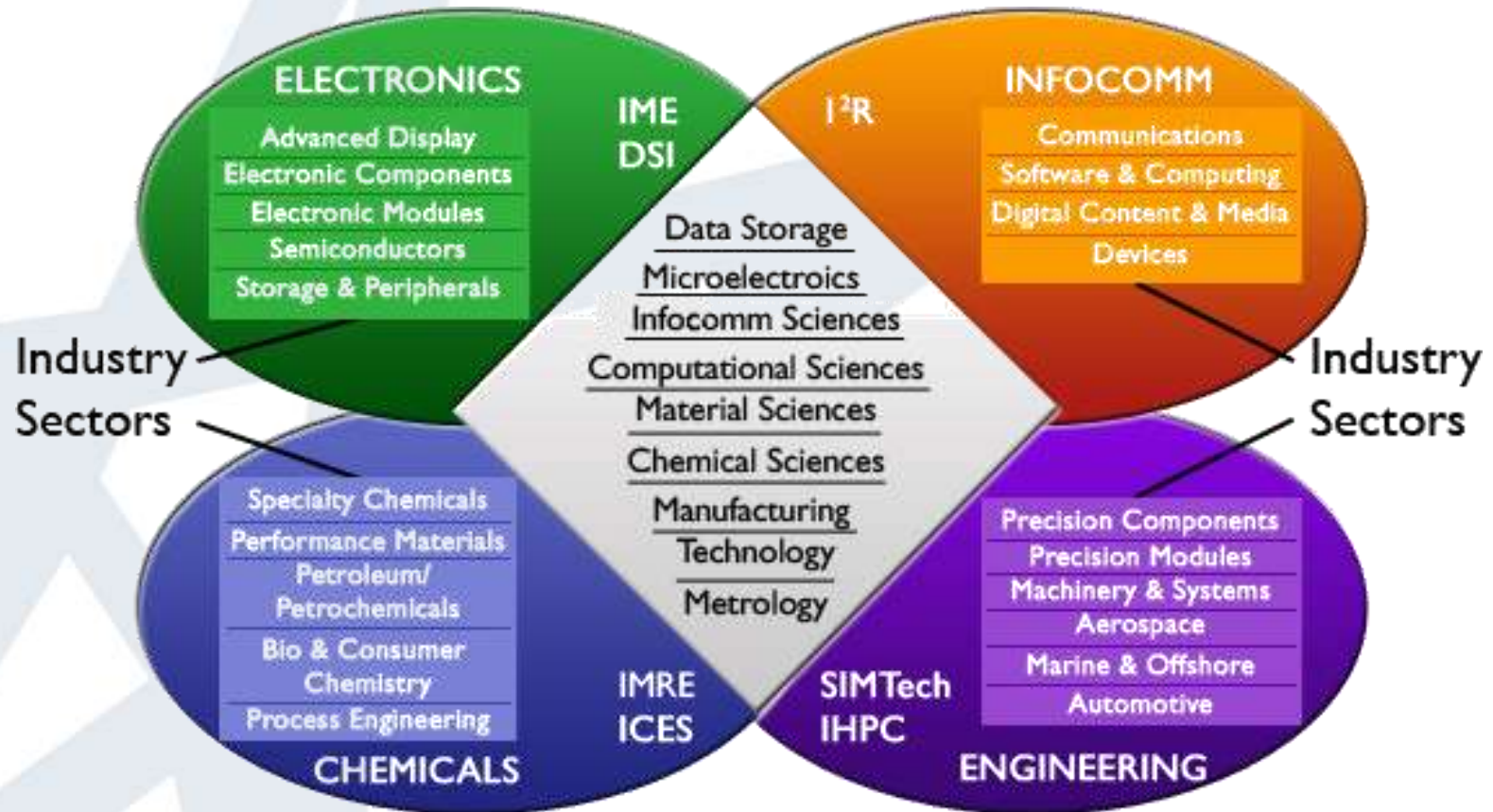
Initiated and funded by A*STAR Science and Engineering Research Council (SERC)



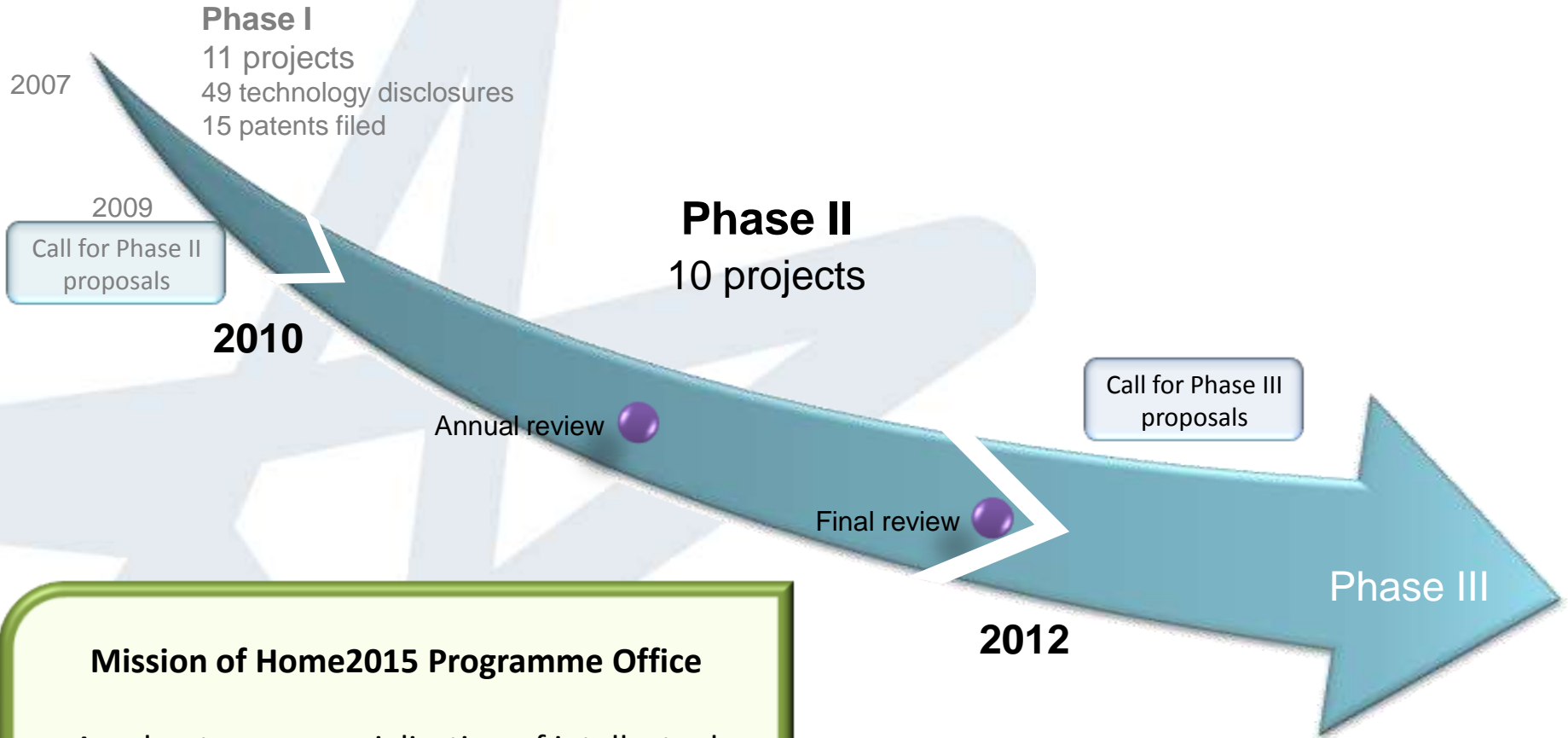
Multi-disciplinary programme involving collaborations across various research institutes

Home2015 – Background Information

SERC Strategic Thrusts



Home2015 – Background Information



Mission of Home2015 Programme Office

Accelerate commercialisation of intellectual property developed by project teams

Establish collaborations with industry partners

Key Drivers

Aging Population

10% (2000)
20% (2050) ¹



Sustainable Living

\$650B (2008)
\$2,300B (2020) ²



Home Automation

\$169.2M (2006)
\$342.3M (2013)
CAGR : 10.6% ⁴



Broadband networking at Home

422M(2008)
580M(2013) ³



¹ UN, *World Population Ageing 1950-2050*

² European Forum on Eco-innovation http://www.tradeforum.org/news/fullstory.php/aid/1542/Green_Technologies:_Opportunities_for_South_96South_Trade.html

³ zdnet.com, <http://www.zdnet.com/news/global-home-broadband-booming/346380>

⁴ Frost, *European Home Automation Markets*, 2007

Home2015 Program Focus Areas

Requirements

Examples of Existing Solutions

Cognitive systems



Intelligent home systems, advanced health monitoring and diagnostic systems

Sustainable Living



Green materials, zero-emission buildings, renewable energy

Entertainment & Social Networking



TV, radio, video games, video conferencing

Connectivity



Phone line (DSL), coaxial cable
Wireless networks, Internet

Comfort & Convenience



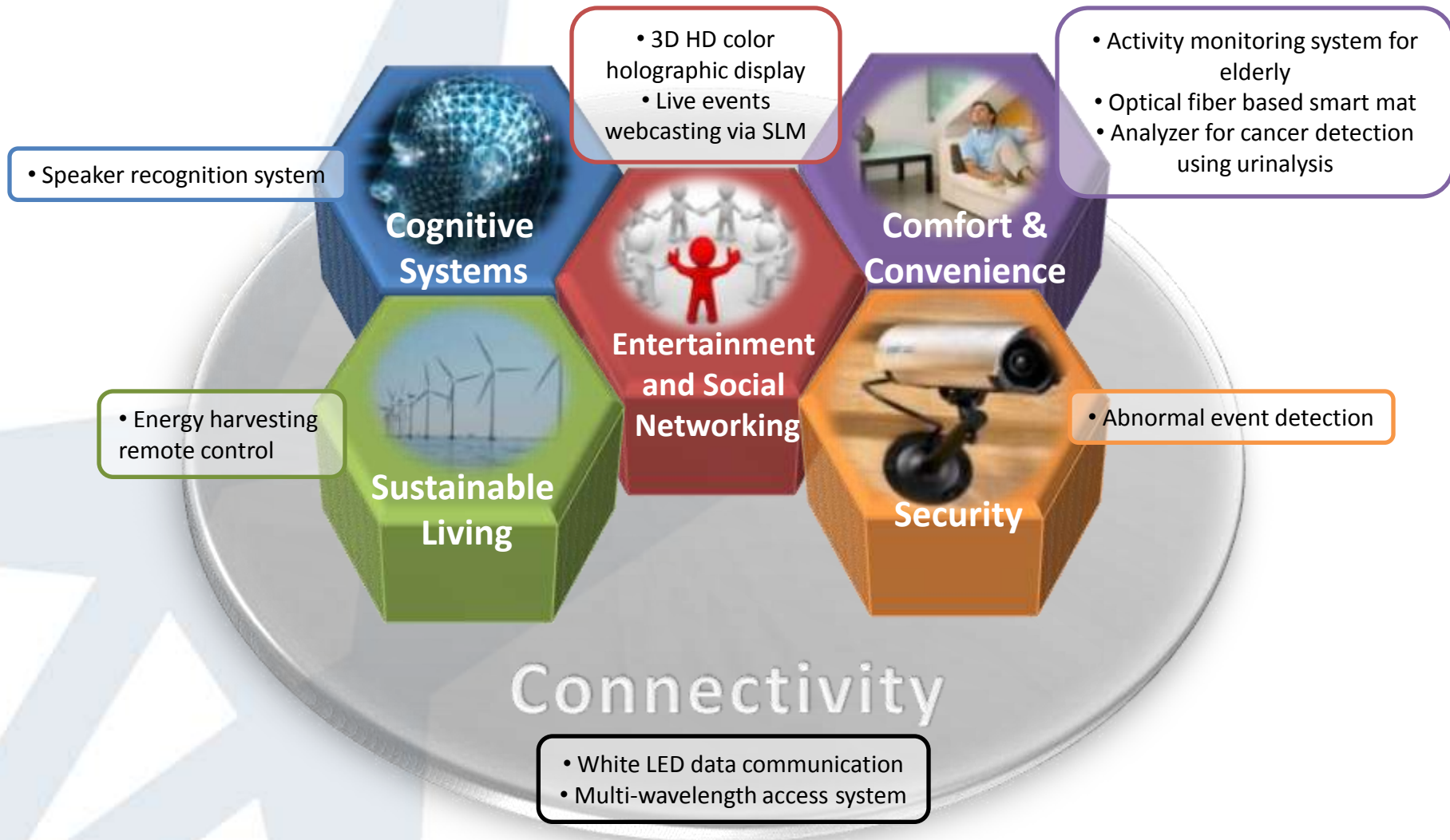
Electricity, lights, fans, water,
home automation systems

Security and Safety

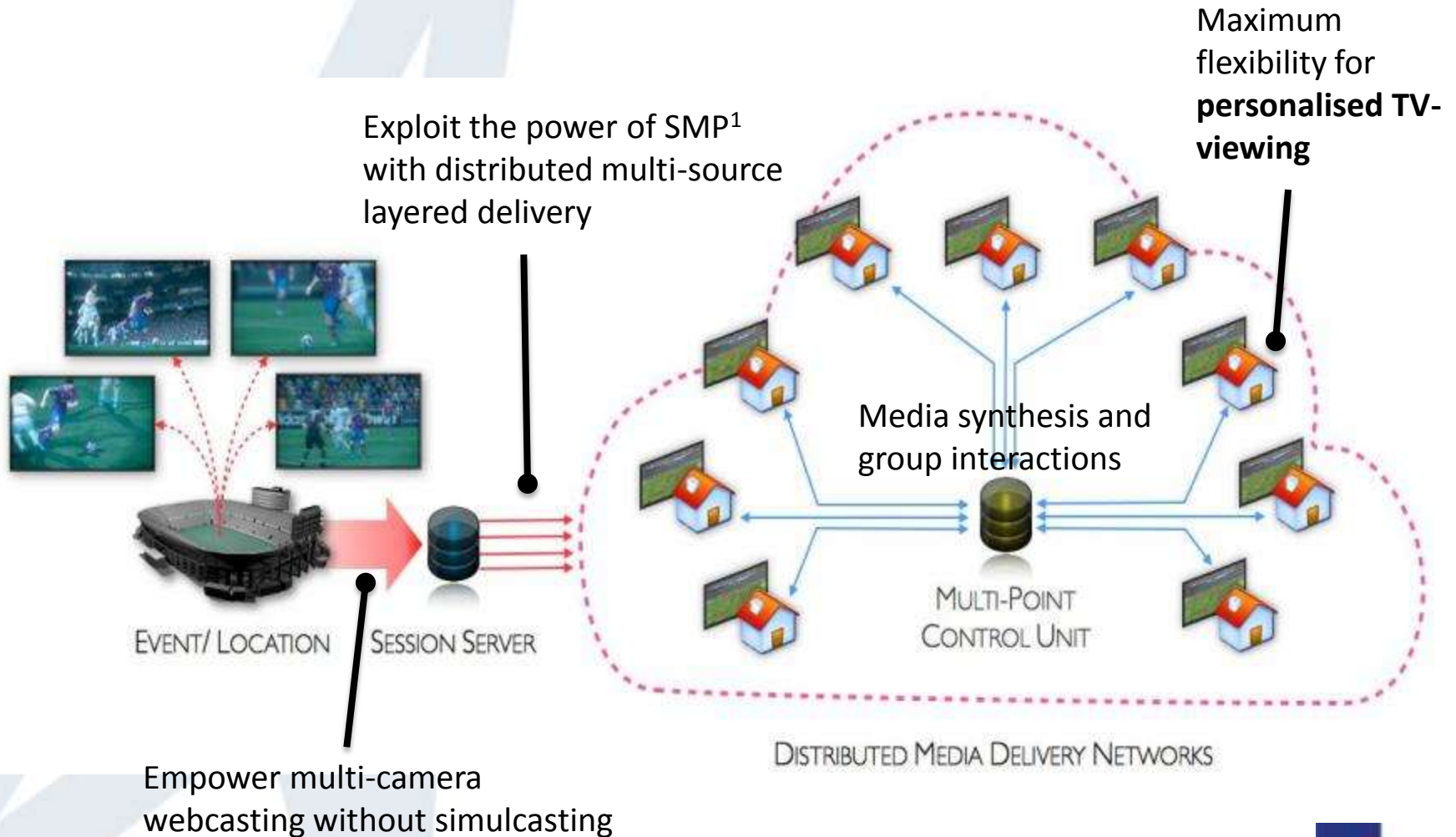


Windows, doors, locks, intrusion detection

A*STAR's Vision for Future Homes



Seamless Webcasting of Live Events via Scalable Multimedia Platform



2 MAIN VIEW using camera 2.

EA SPORTS CHE 1 CHI 0 85:19

High quality video resolution upscaling

Yes!

ALR² allows individualised combination of camera views

CAMERAs available for current channel with real time viewing field & angle information.

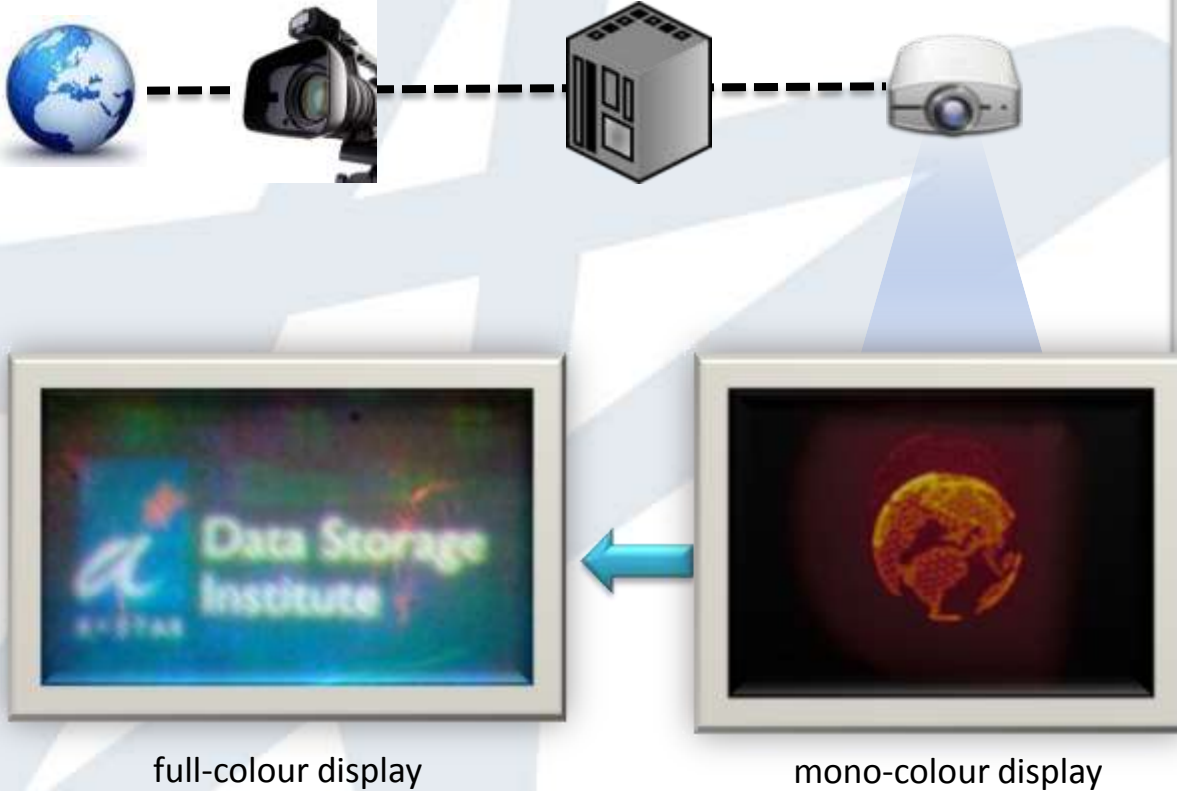
SIDE VIEWs using selected camera 1 & 3. Camera 4 is available but not selected.

SEATS for side-by-side viewing and chatting with friends.

Picture with credits to EA Sports

High Definition Full Colour 3D Holographic Display

3D object 3D content capturing system CGH¹ generator Full colour HD holographic display



Algorithm for GPU²-based CGH computation

Proven methodology for

- Speckle reduction/ evaluation
- Occlusion
- Colour generation

High resolution full parallax hologram display

Hologram data transmission via optical fibre network

Optical Fibre based Smart Mat for Physiological Monitoring

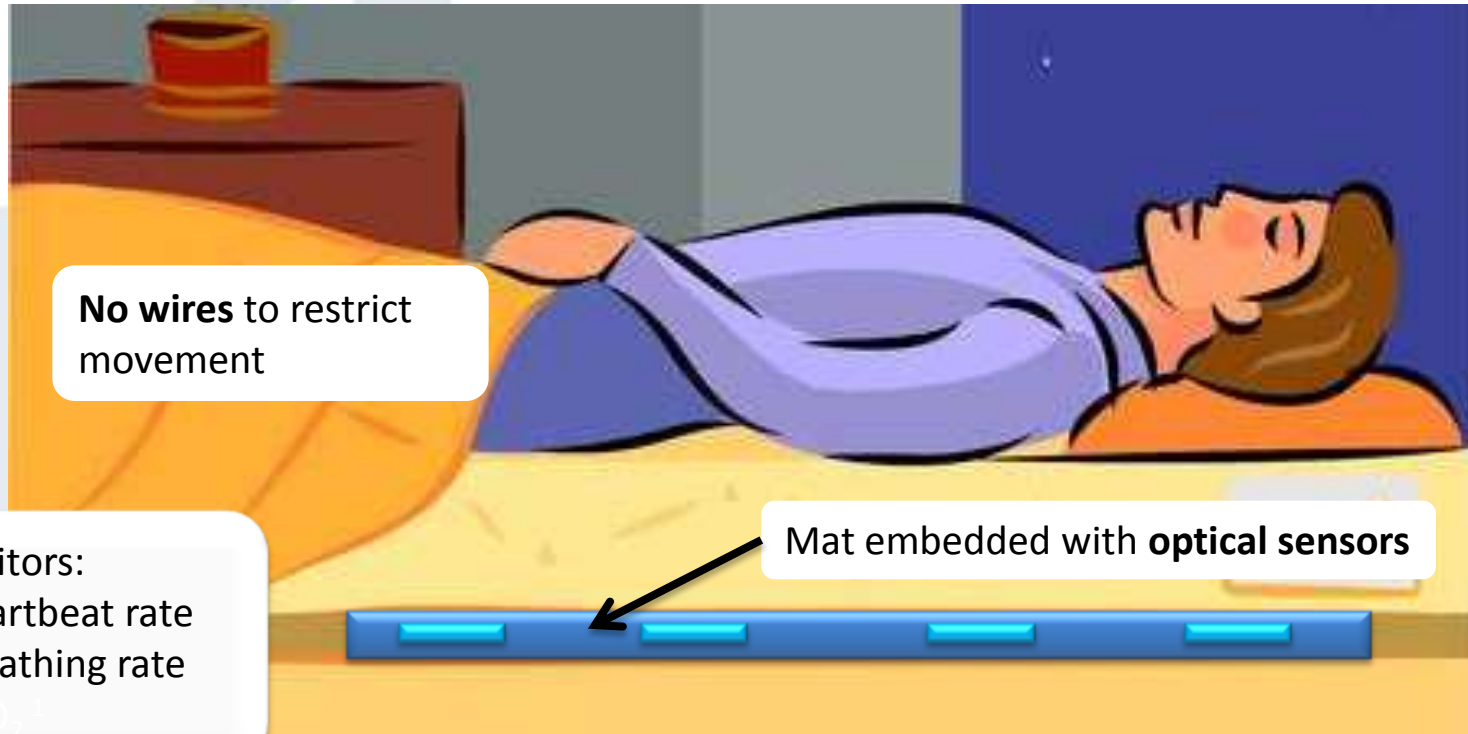
Simple and reliable technology using optical fibre

No wires to restrict movement

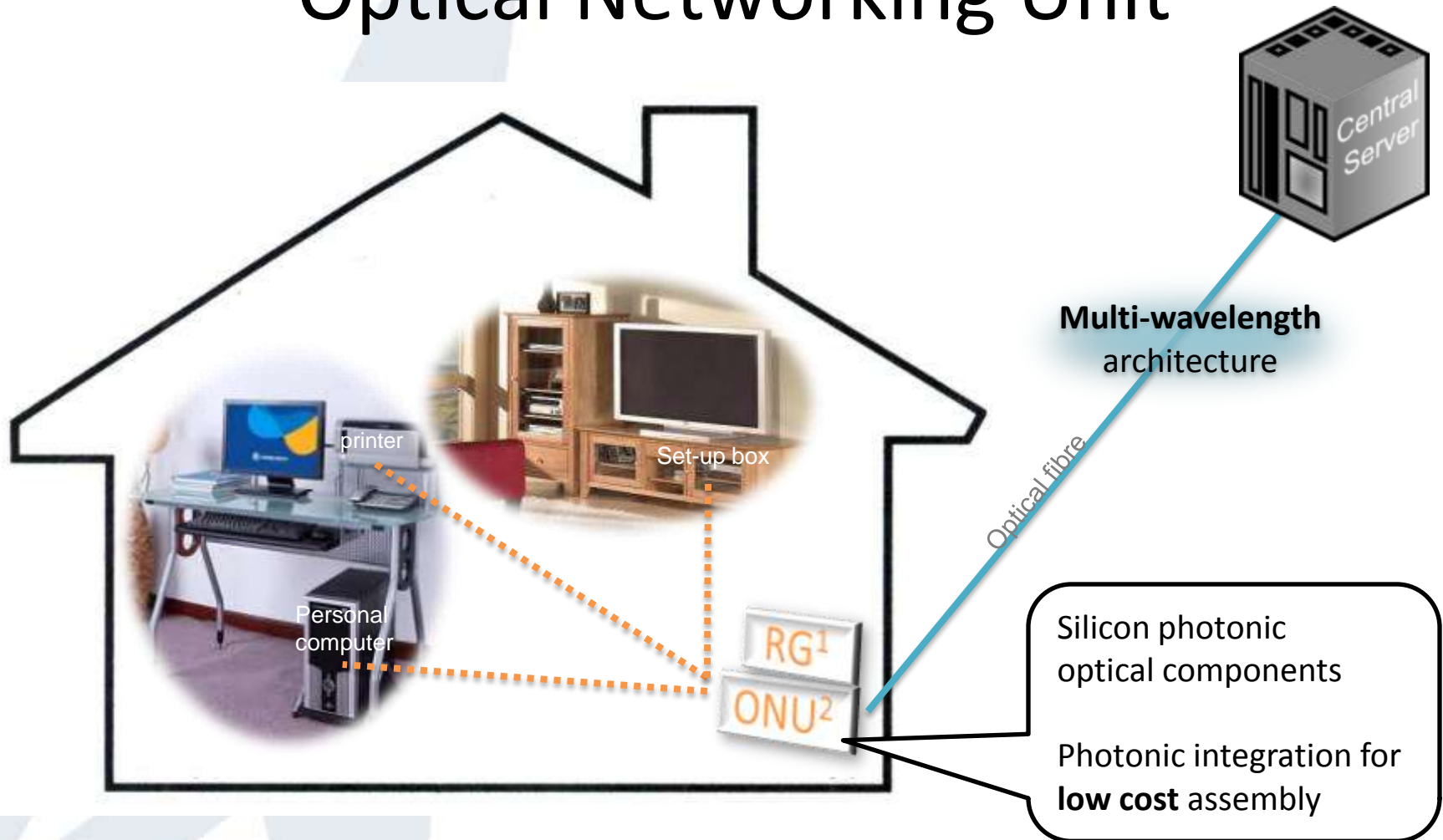
Monitors:

- Heartbeat rate
- Breathing rate
- SpO₂

Mat embedded with optical sensors



Multi-Wavelength Optical Networking Unit



About STARhome

STARhome is a technology showcase and a business development platform featuring leading-edge technologies and sophisticated home concepts.

With cameras and one-way mirrors that enable usability studies, researchers are able to gain insights into the needs of future users.

Demonstrate the benefits of the new technologies

Allows companies to translate cutting-edge technologies into commercially viable products.



How Home2015 Programme Office can assist you

Facilitate discussions with
A*STAR technical experts



Discussions on licensing
and collaborations



Advise on various
funding schemes



Conduct tours to
labs and STARhome





Thank you!

For enquiries on
collaboration/ licensing opportunities,
please contact
Kellie Tan

yxtan@i2r.a-star.edu.sg