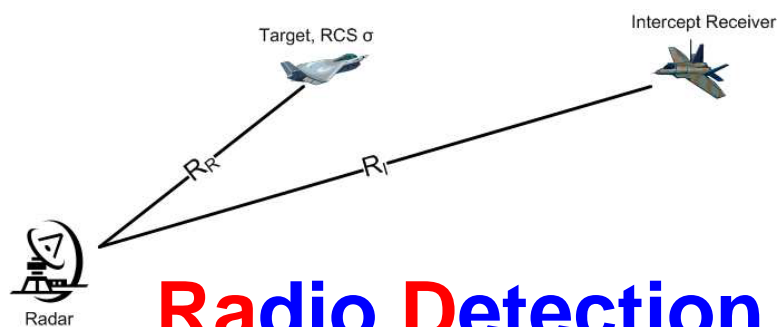


## Briefing for Third Year Students on

# Radar Programme

Coordinator: Ng Boon Poh  
20 March 2014 (Thursday)

## What is a Radar ?



## Radio Detection and Ranging

# APPLICATIONS

3

## Military



4

## Military



5

## Radars in Electronic Warfare



[A Radar Video Clip](#)

6

**Air traffic control** – used in the airports



7

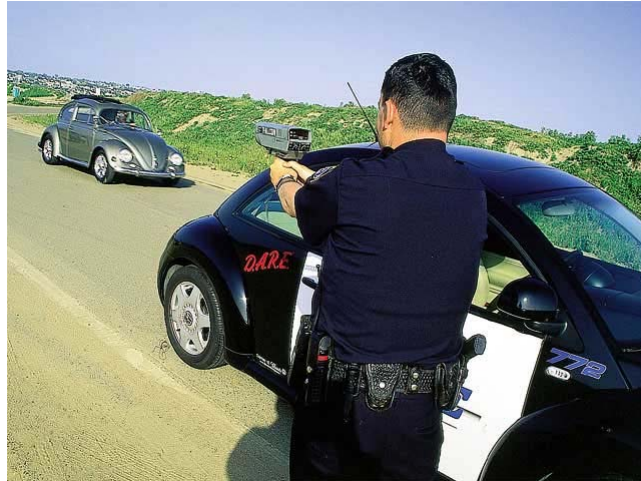
**Sea traffic control** – used in the seaports and on board of the ships



8



## Road traffic control – used by the police to monitor car speeds



9

## Weather forecasting and monitoring

- [http://app2.nea.gov.sg/rain\\_animation.aspx](http://app2.nea.gov.sg/rain_animation.aspx)

[Click here](#)

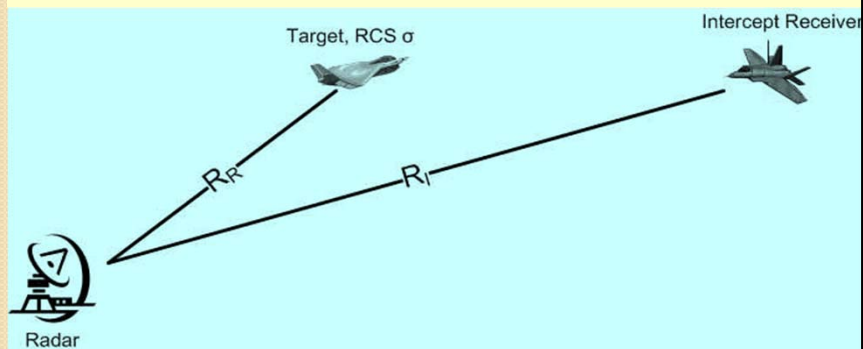


## What's next after DIP?

- We have put in place a series of programmes for interested students !

11

## EE4190 Introduction To Modern Radar



Radio Detection and Ranging

12

## DESIRED OUTCOME

At the end of the course, the students are able to understand the working principles and operations of a typical radar system so as to be able to participate in the design, installation and management of some typical radar systems.

13

## Teaching Team Members

- Tan Shen Hsiao
  - Senior Research Scientist, TL@NTU
- Ang Wee Peng / Yap Han Lun
  - Distinguished Member of Technical Staff, DSO National Lab
- Sylvain Azarian / Jonathan Pisane
  - Researchers, Supelec, France
- Ng Boon Poh
  - Course Coordinator & Tutor, NTU

14

## Course Awards



- TL@NTU Radar Award
- Award:
  - S\$500 for top student in the class
  - S\$500 for top Singaporean student in the class. (if overall top student is a Singaporean, he/she will receive S\$1,000.)

15

## What's next after B.Eng? -- PhD Programme

- TDP PhD scholarships / sponsorship from School of EEE and TL@NTU
- Up to S\$3200++ per month
- Mindef/DSO (several scholarships for Singaporeans)



## Careers in Radar

Job Opportunities in homeland securities, defense industries, biomedical engg ...

- TL@NTU
- DSO National Lab
- Research teams in School of EEE
- Mindef
- Singapore Technology
- Thales Solutions Asia
- CAAS (*Civil Aviation Authority of Singapore*)
- PSA Singapore
- Companies in aerospace industries .....

## Careers in Radar (con't)

Some development out there ...

- Thales Solutions Asia has just set up a Radar Centre of Excellence on 25 Jan 2013.
- Seletar Airport (Seletar Aerospace Park) expanded to be Business Aviation Hub
- Air traffic management research centre to open by in 2014.



## Careers in Radar (con't)

- New radar system for new air traffic control centre opened in Feb 2014.
  - Singapore's aviation sector is expected to grow at an annual rate of five per cent until the end of the decade.



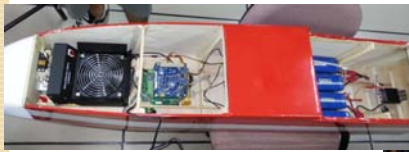
19

## What Students Did in the Past

- Implementation of a radar prototype on a Unmanned Aerial Vehicle
- Construction of an ultrasound pulse radar on the Labview Elvis platform
- A phased array radar system simulator
- Target detection using radio broadcasting stations
- Development of a software defined radar (SDR)
- Police Radar Speed control system

20

## Students in action...



21

**Wish you a fruitful DIP**

**Thank you**

22