# GeoRouting by Castalia
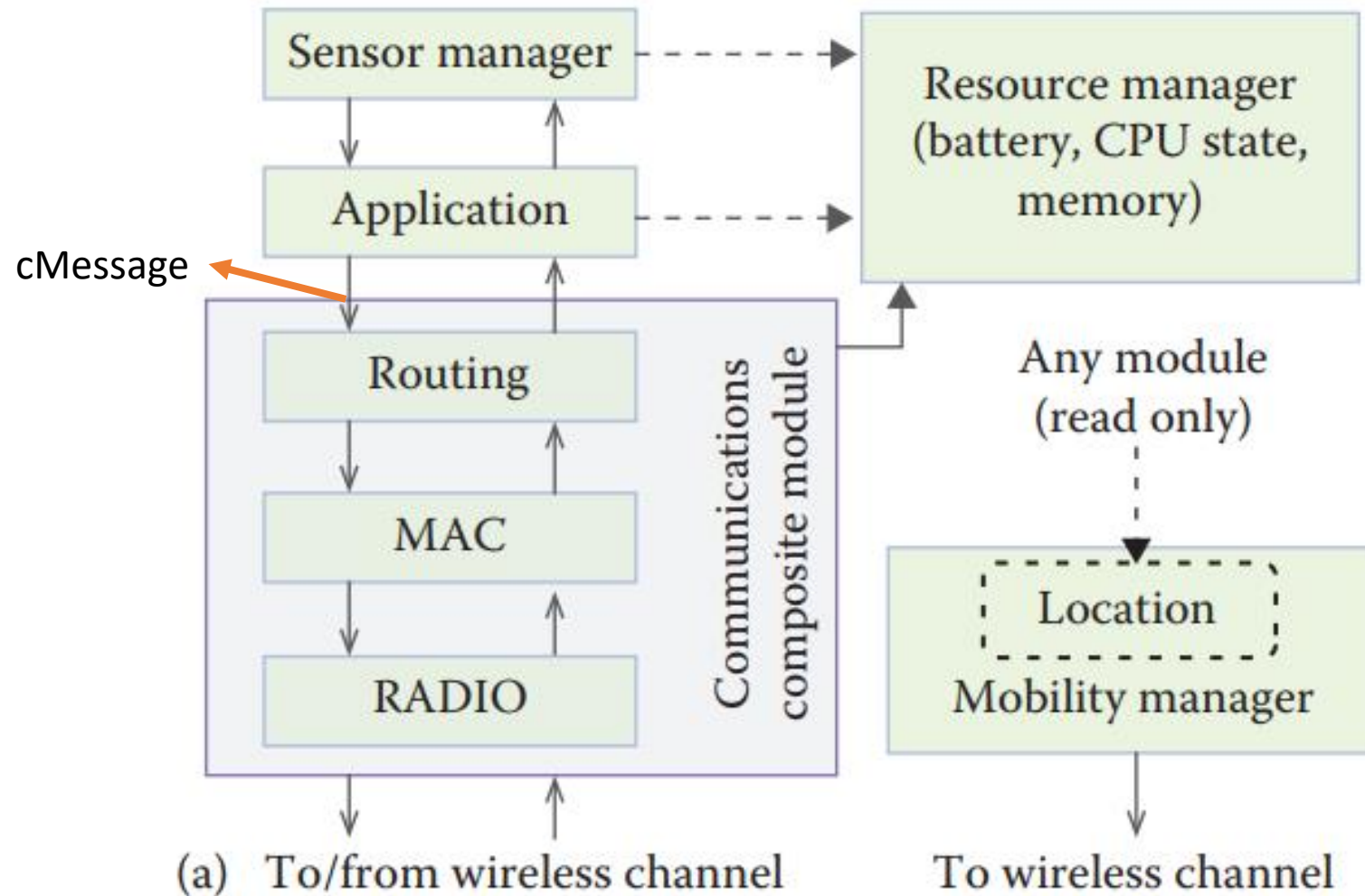
Demo by hungtt28

# Contents

- Castalia Overview
- Adding new GeoRouting
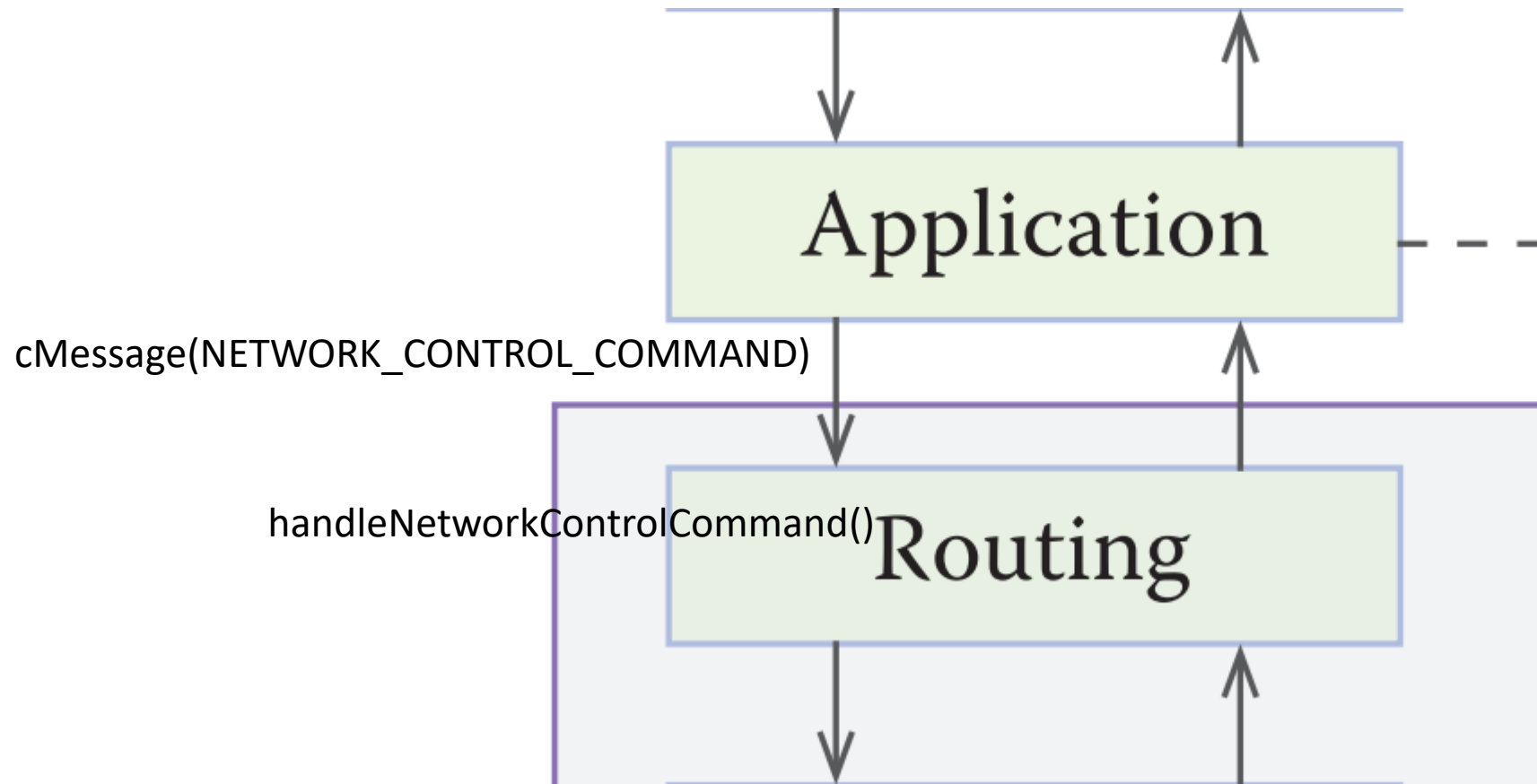- Demo

# Castalia
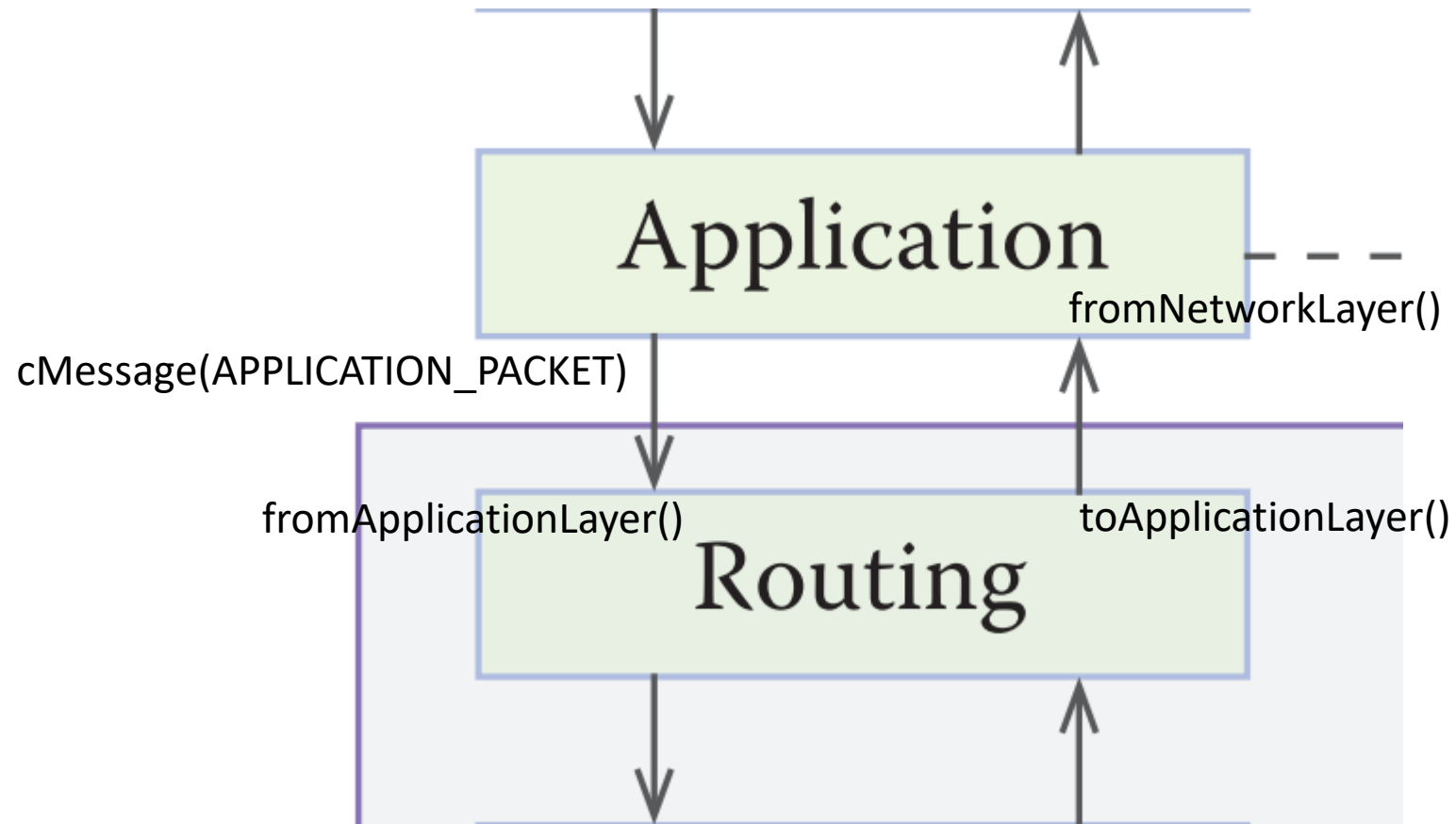
- Node



Sensor manager

Application

cMessage

Routing

MAC

RADIO

Communications composite module

Resource manager (battery, CPU state, memory)

Any module (read only)

Location

Mobility manager

(a) To/from wireless channel

To wireless channel

# Castalia

- NETWORK_CONTROL_COMMAND



cMessage(NETWORK_CONTROL_COMMAND)
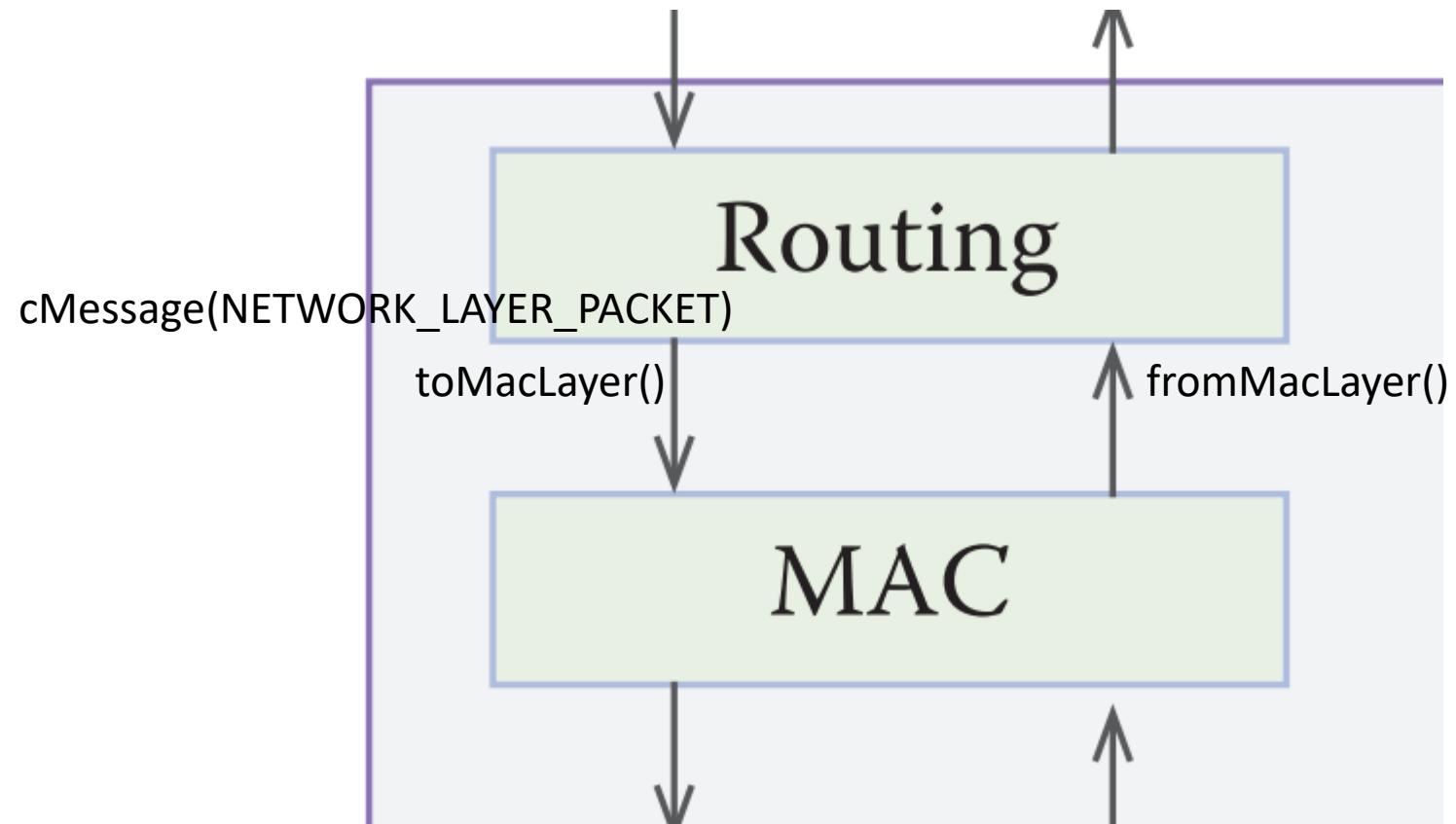
handleNetworkControlCommand()
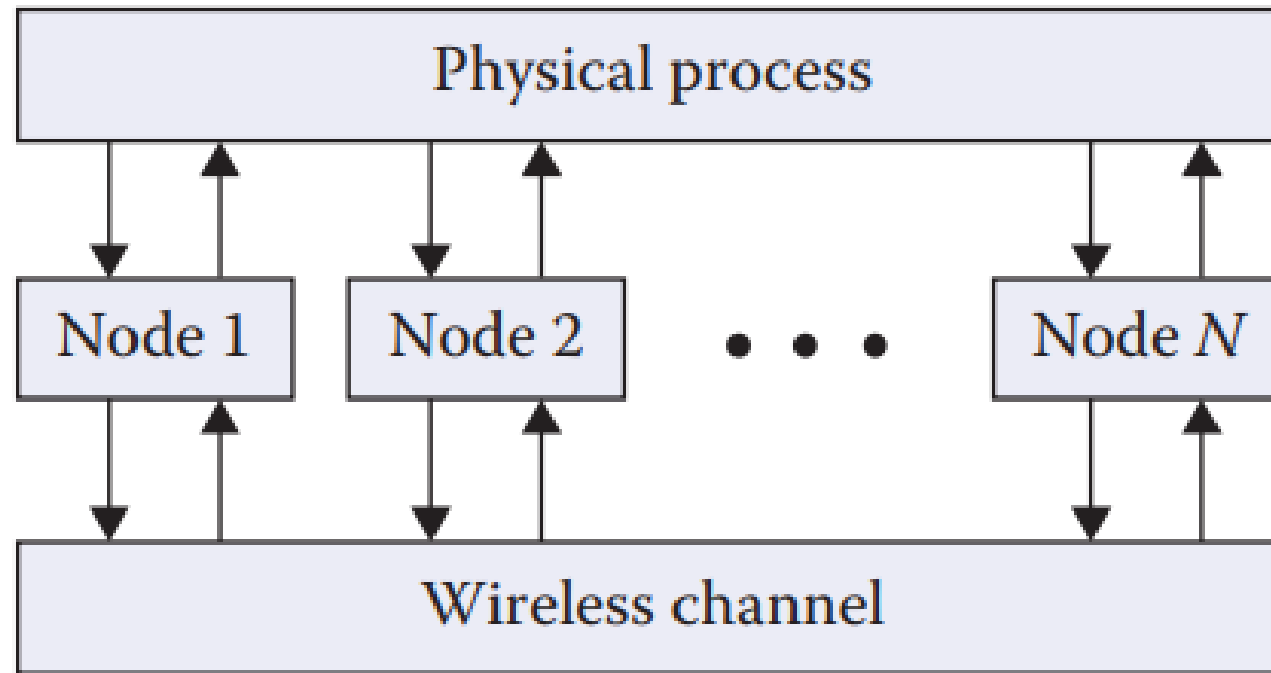
# Castalia

- APPLICATION_PACKET

# Castalia

- NETWORK_LAYER_PACKET

# Castalia



(b)

# Adding new GeoRouting

- New Simulation
  - Simuation (omnetini)
  - Application (routingTest)
  - Routing (new GeoRouting)

# GeoRouting

- Simulation (omnetpp.ini)
  - Radio range (Radion, wirelessChannel)
  - MAC
  - Routing (GeoRouting)
  - Application (routingTest)
  - numNodes
  - Coordinates
  - Source, destination
  - Sim-time-limit, startupDelay

# GeoRouting

- routingTest
  - SET_GEO_NODE_POS: update current location of node to routing layer
  - If (Source)
    - Send APPLICATION_PACKET to MAC layer
  - If (Received)
    - Stop

# GeoRouting

- GeoRouting
  - sendHelloMessage
  - forwardDataPacket
    - fromMacLayer
    - toMacLayer

# Demo

- OMNet
    - 1. Download omnet++ 4.6 from https://omnetpp.org/
    - 2. Extract omnetpp-4.6-src-windows.zip
    - 3. Run mingwenv.cmd
    - 4. ./configure
    - 5. make

# Demo

- Castalia + GeoRouting
  - 1. Run mingwend.cmd
  - 2. cd path/to/Castalia
  - 3. make clean
  - 4. makemake
  - 5. make depend
  - 6. make

# Demo

- Run
  - 1. cd Simulations/routingTest
  - 2. ../../Castalia.exe

# THANK YOU