

# Command based iso setting

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# Agenda

- Outline
  - First initiator
  - Setting up
  - Response
  - Reallocation
- Contents of command
- Routing method
- List of errors
- Advantages
- Needs for IR bridge system
- Example

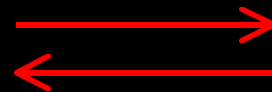
# Outline

- Initiator generates a command
- The command travels to Talkers bus
- Then to Listener bus while setting buses
- Response returns to the initiator

Initiator



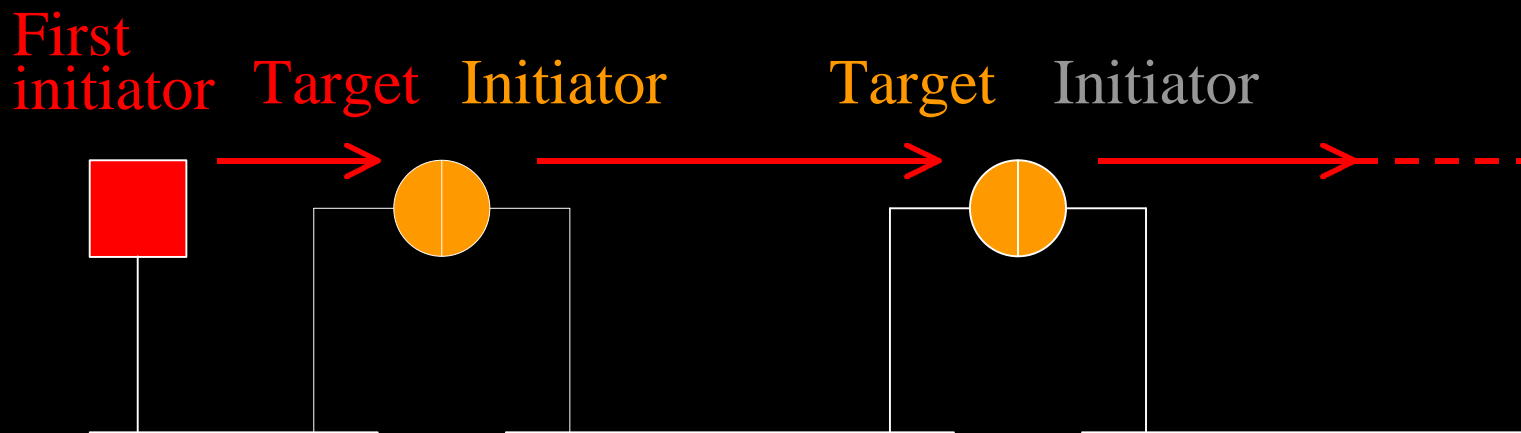
Talker bus



Listener bus

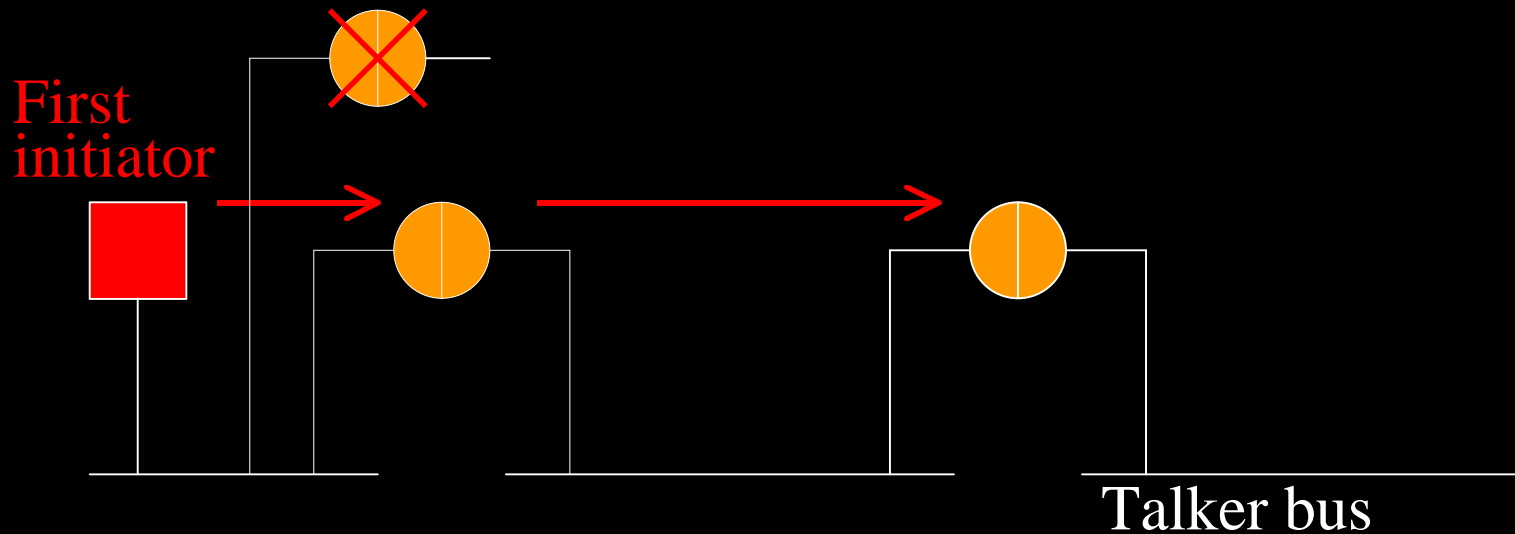
# First initiator

- First initiator generates a command
- Do not send command directly to remote node



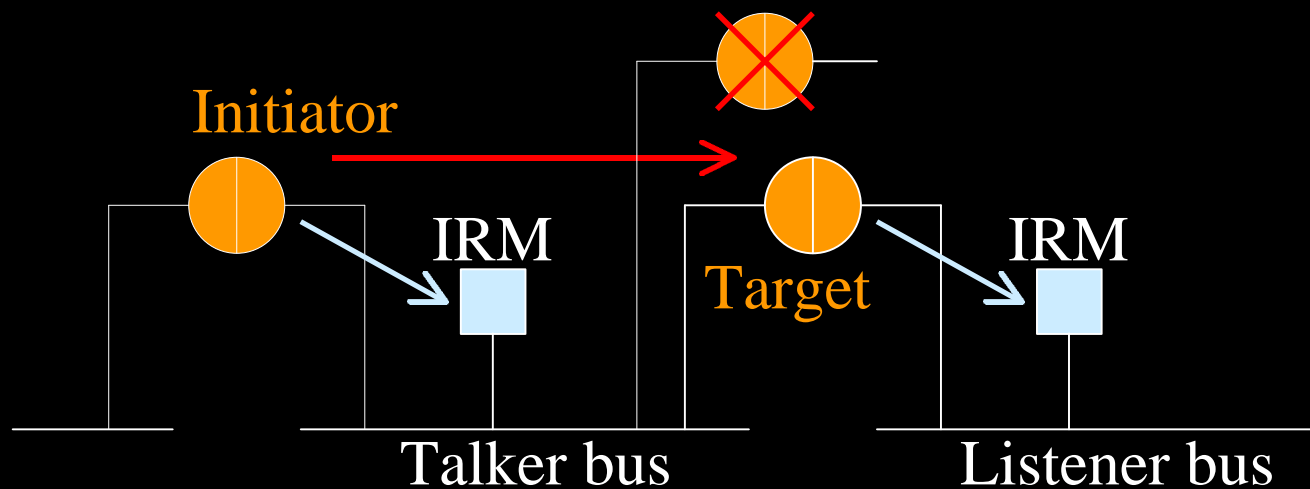
# Get a talker bus

- Initiator reads routing registers of bridges on the same bus
- Find the bridge leads to Talker bus



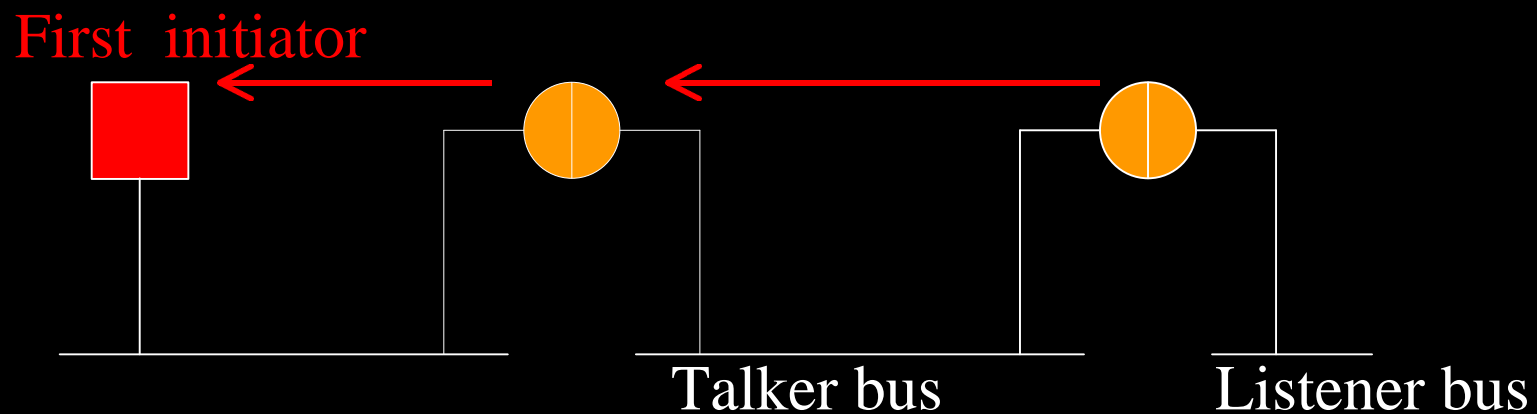
## To a listener bus

- Allocate resources at its local bus
- Find the portal leads to listener
- Continue until reaching listener bus



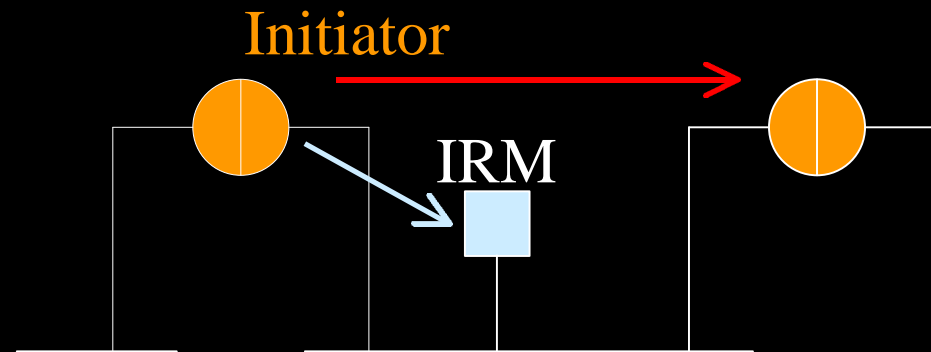
# Response

- At last, response should be returned to the First initiator
  - with error code
  - and Channel numbers at Talker bus and Listener bus
  - forwarded every bridges on the same path as request



# Reallocation

- If an initiator experiences bus reset at its attached bus, the initiator should
  - reallocate bus resources in a second
  - send reallocate command to the target



# Contents of command

- Setting request
  - Command ID
    - To distinguish this from the others
    - Unique ID in a net
    - First initiator's EUI + several bits ?
  - Talker bus ID
  - Listener bus ID
  - Bandwidth
  - Speed ?
  - Channel number
    - Depending on a bus
    - Used for portal setting

# Contents of command

- Reallocate request
  - Command ID
  - Channel number
- Reallocate notification
  - Command ID
  - Channel number of
    - talker bus or
    - listener bus

if it has been changed
- Reset request
  - Command ID
- Response
  - Command ID
  - Channel number
    - talker bus
    - listener bus
  - Error code

# Routing method

- The same path for asynchronous packets
  - Read routing bitmap table in every bridge
  - Find portal leads to destination,
    - talker bus
    - or listener bus
- Or smart router, bridge manager ?, works for routing commands

# List of expected errors

- Shortage of bus resources
  - Bandwidth
  - Channel number
- Shortage of bridge resources
  - Bandwidth
  - STREAM\_CONTROL registers
- Command rejected
  - Target is busy
- Fail in reallocation
- Routing bitmap error
  - Can not get destination

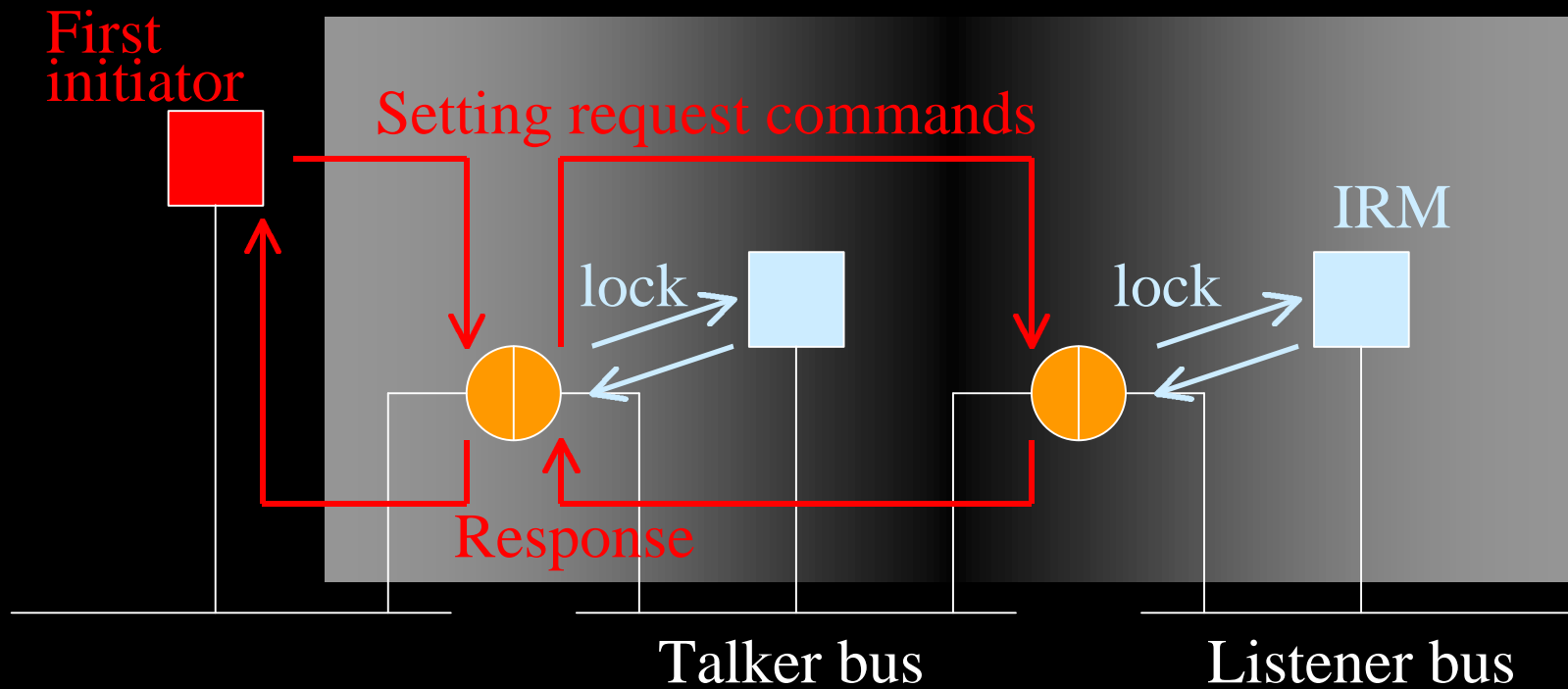
# Advantages

- Advantages of command
  - Whole traffic for iso setting can be reduced
  - First initiator need not touch all IRMs on isochronous path
  - Reallocation
- Disadvantage
  - Portal has to take care of all commands it receives

## Needs for IR bridge system

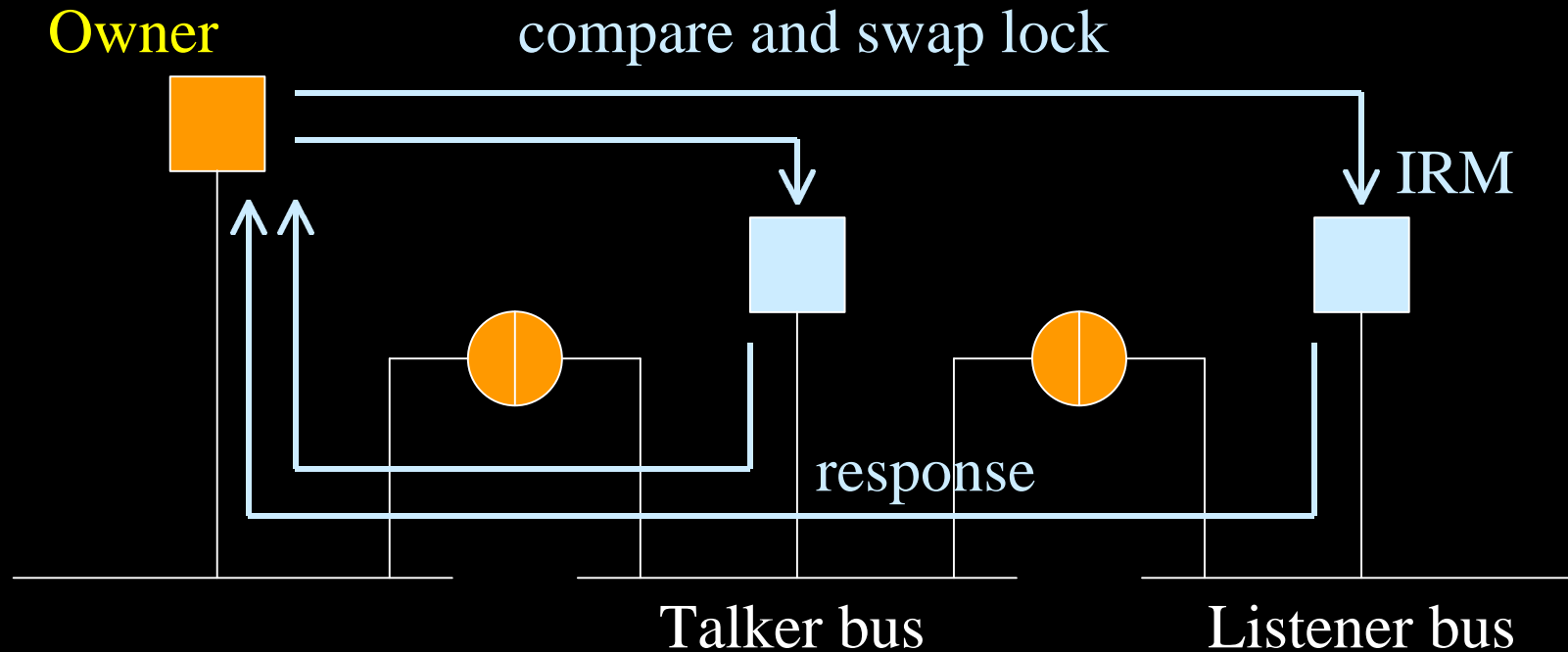
- IR system has bandwidth restriction
  - It should be hidden from the other 1394 nodes
- If we choose command based setting, First initiator can no longer recognize the restriction

# Example of command setting



- Setting process can be hidden from First initiator

# Example of CSR based setting



- Owner should set all IRMs on the path
- Can owner reallocate resources in a second after bus reset?