reg\_rd\_out

reg\_rd\_in

4’b1111

ret\_future\_in

call\_in

call\_in / call\_out

ret\_wb

call

branch

Pipe to Pipe

read\_data\_2

PC\_in

alu\_op

sw\_data

PC\_update\_done

PC\_src

PC\_update

alu\_result

alu\_src

ALU

PC\_Update

Flags\_reg

set\_flags

updated\_flags

alu\_done

PC\_stack\_pointer

PC\_in

read\_data\_1

read\_data\_2

sign\_ext

shift

load\_half\_imm