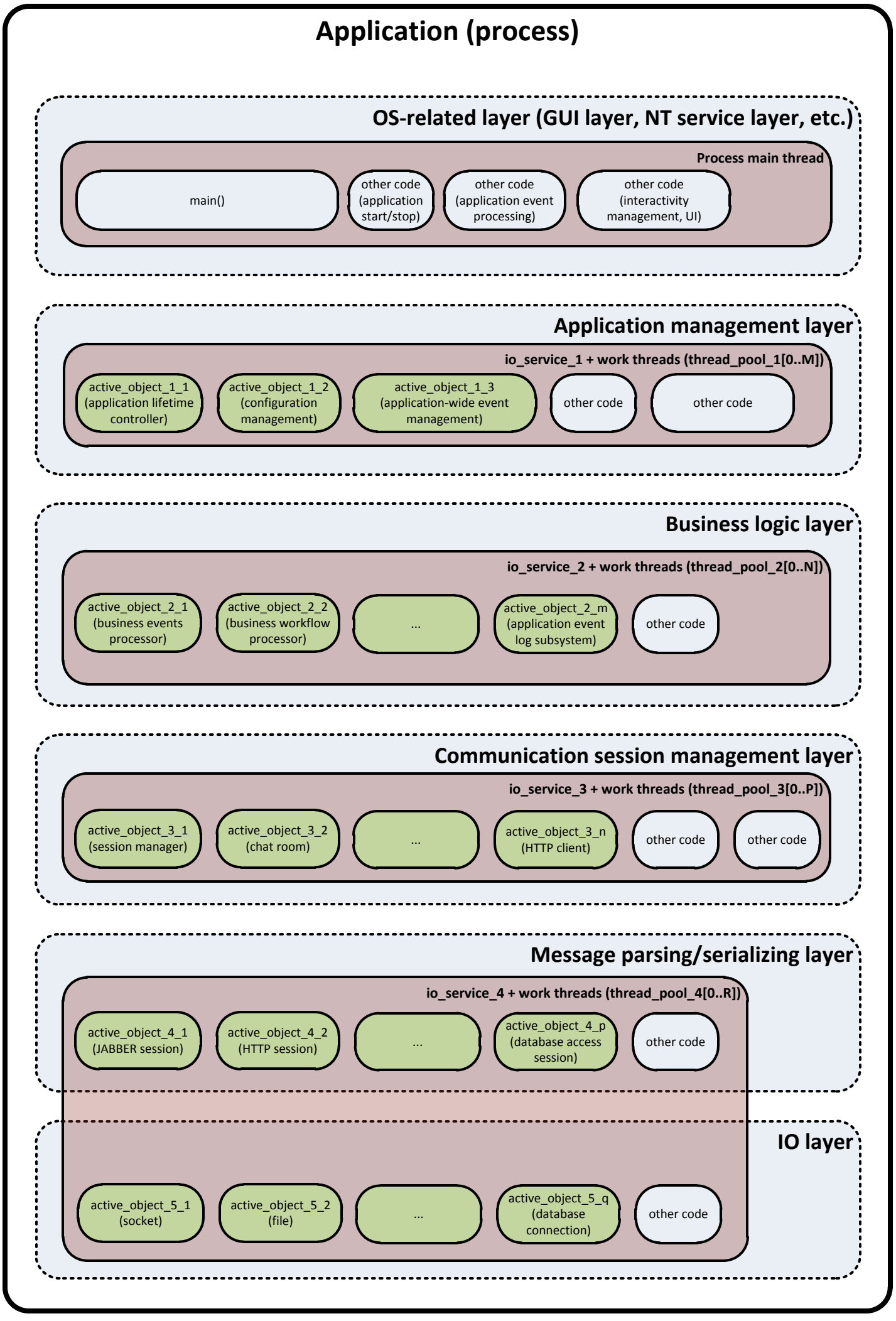
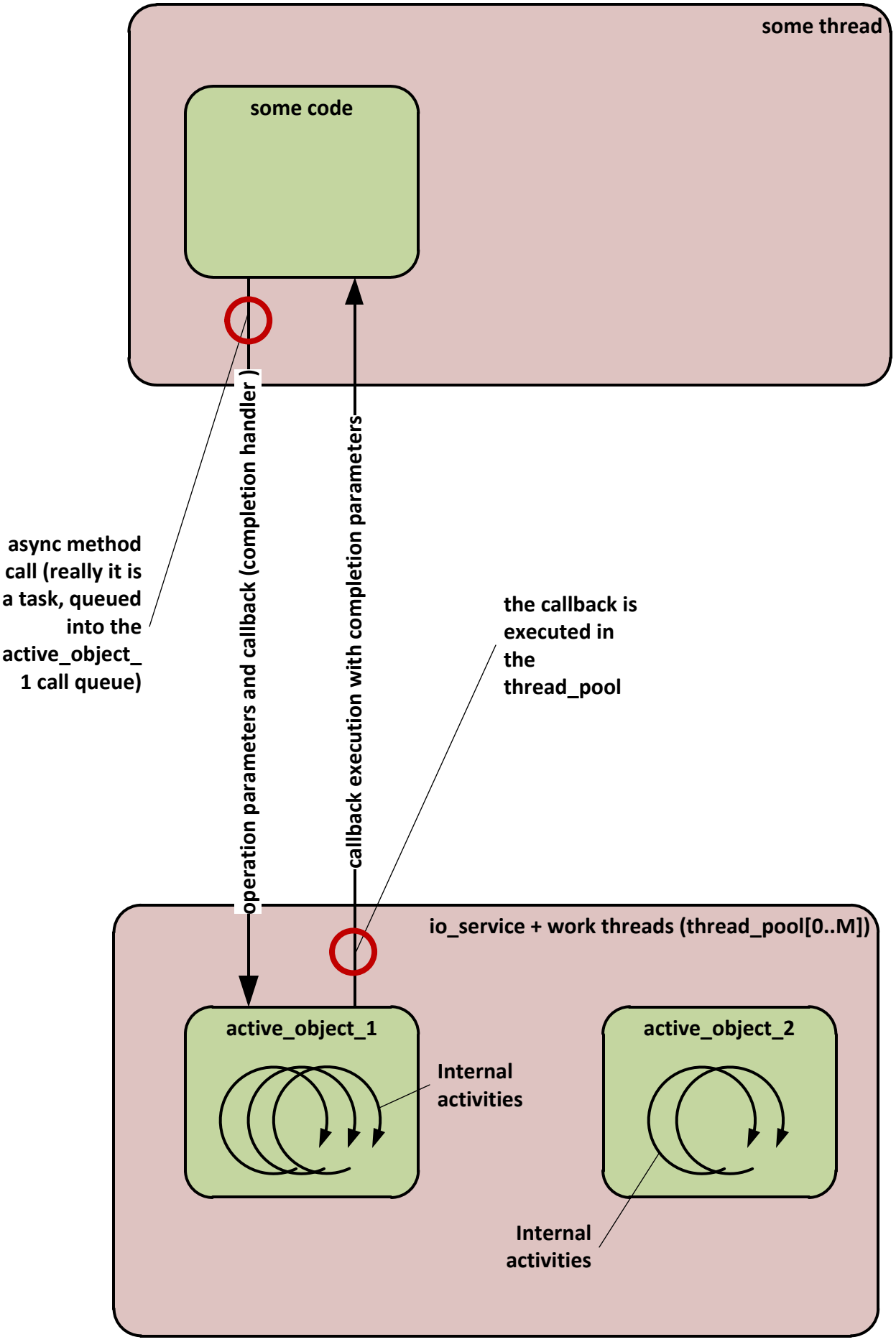
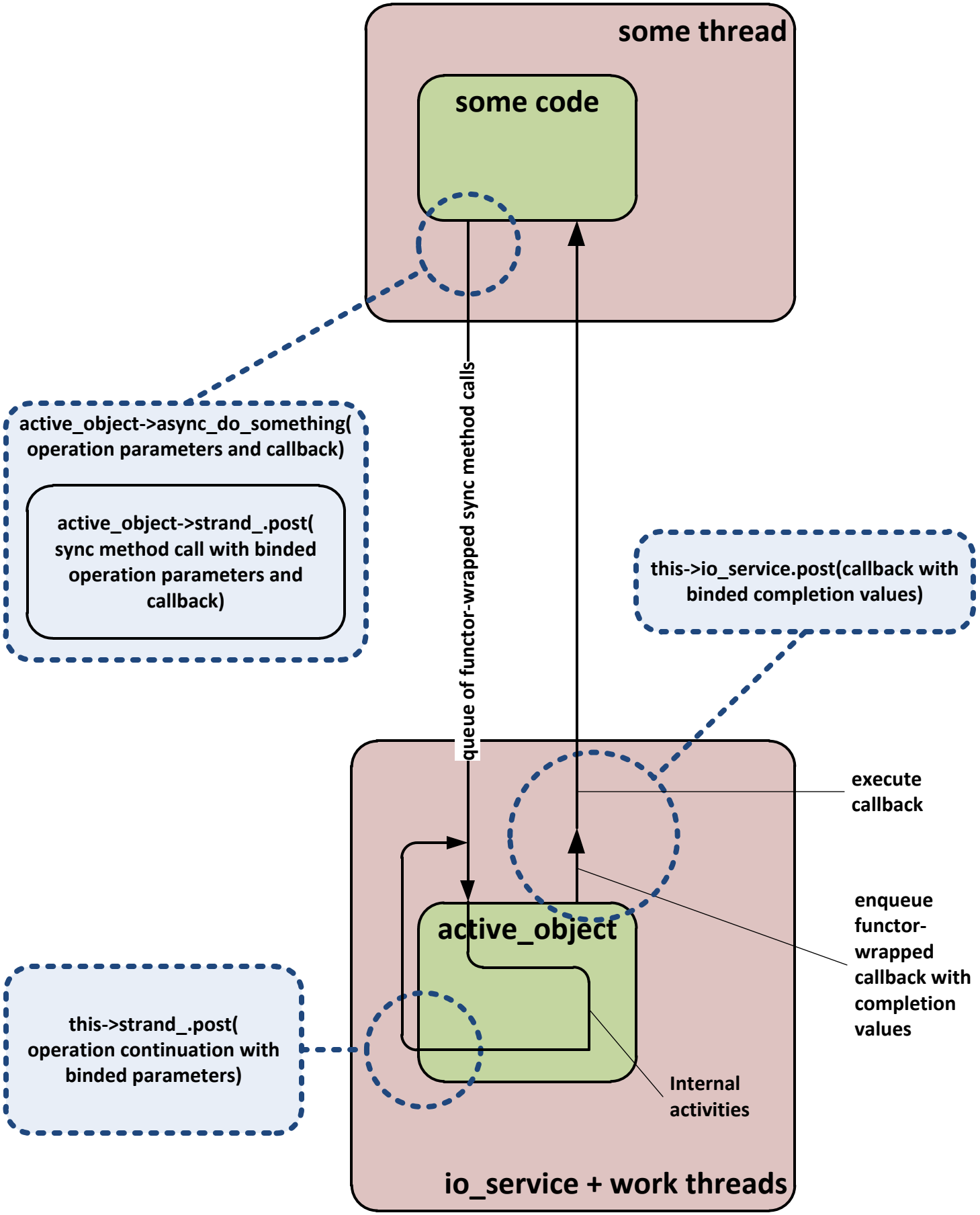
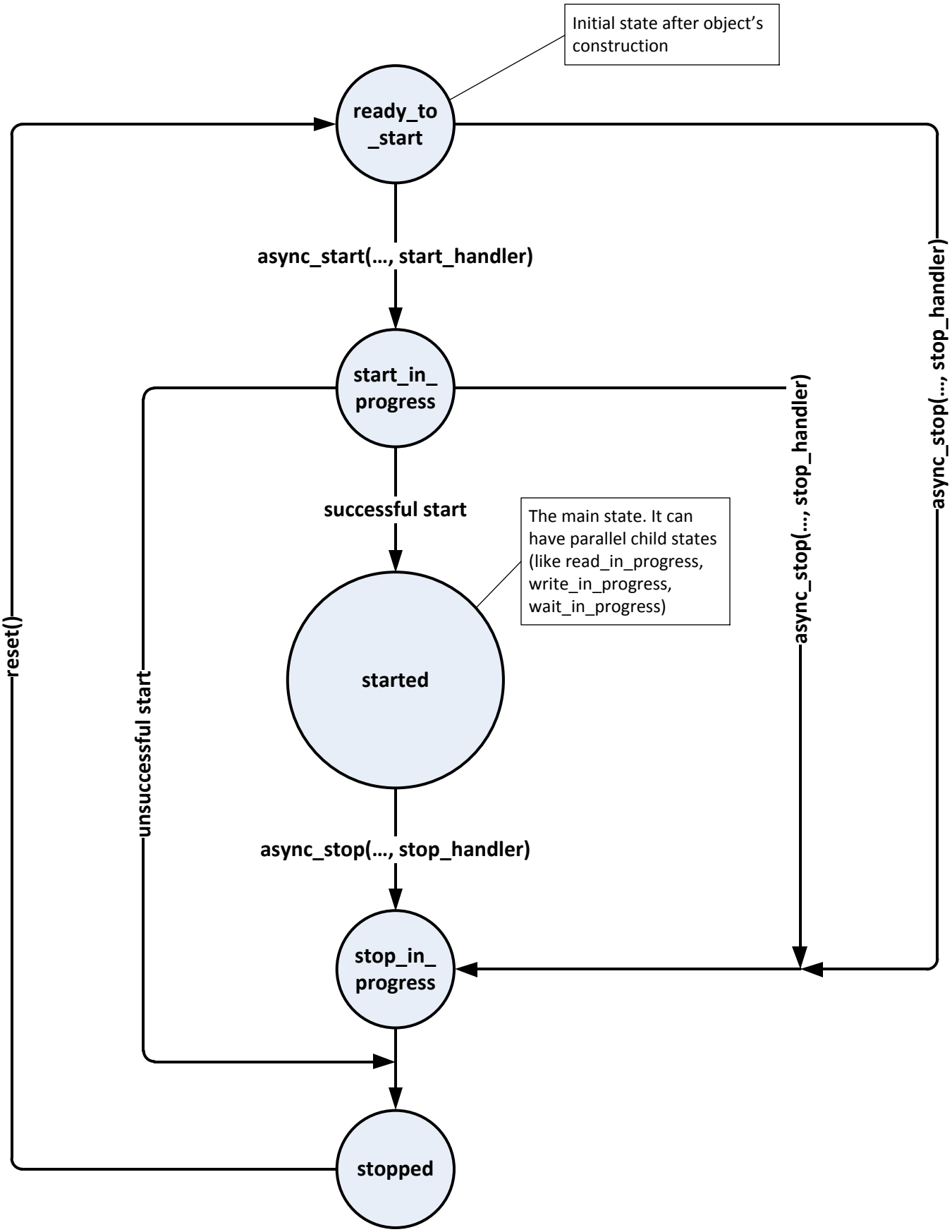

Application (process)
OS-related layer (GUI layer, NT service layer, etc.)
Process main thread
main()
other code (application start/stop)
other code (application event processing)
other code (interactivity management, UI)
Application management layer
io_service_1 + work threads (thread_pool_1[0..M])
active_object_1_1 (application lifetime controller)
active_object_1_2 (configuration management)
active_object_1_3 (application-wide event management)
other code
other code
Business logic layer
io_service_2 + work threads (thread_pool_2[0..N])
active_object_2_1 (business events processor)
active_object_2_2 (business workflow processor)
...
active_object_2_m (application event log subsystem)
other code
Communication session management layer
io_service_3 + work threads (thread_pool_3[0..P])
active_object_3_1 (session manager)
active_object_3_2 (chat room)
...
active_object_3_n (HTTP client)
other code
other code
Message parsing/serializing layer
io_service_4 + work threads (thread_pool_4[0..R])
active_object_4_1 (JABBER session)
active_object_4_2 (HTTP session)
...
active_object_4_p (database access session)
other code
IO layer
active_object_5_1 (socket)
active_object_5_2 (file)
...
active_object_5_q (database connection)
other code


some thread
some code
operation parameters and callback (completion handler)
callback execution with completion parameters
async method call (really it is a task, queued into the active_object_ 1 call queue)
the callback is executed in the thread_pool
io_service + work threads (thread_pool[0..M])
active_object_1
Internal activities
active_object_2
Internal activities


some thread
some code
active_object->async_do_something(
operation parameters and callback)
active_object->strand_.post(
sync method call with binded
operation parameters and
callback)
queue of functor-wrapped sync method calls
this->io_service.post(callback with
binded completion values)
execute
callback
enqueue
functor-
wrapped
callback with
completion
values
active_object
this->strand_.post(
operation continuation with
binded parameters)
Internal
activities
io_service + work threads

State diagram for the simplest active object