SCHEDULER LOGIC APPLIED WHEN A CORE IS READY TO DO SOME WORK

NOTE: .at is a shorthand for .lowest_arrival_time
Red lanes are never taken, green conditions are tautologic

```
                                          waiting.empty                                                      +----------+
                                          +------------------------------------------------------------------+SIGNAL end+-+
                            ready.empty   |                                                                   +----------+ |
                            +-------------+                                                                               |
                            |             |waiting.not_empty                          +----------+ +-----+              |
                            |             +-------------------------------------------+FWD waiting+-+FLUSH+--------------+
                            |             |                                           +----------+ +-----+              |
                            |             |                  waiting.empty            +---------+                       |
        waiting.empty  +------+ |         |                  +------------------------+FWD ready+-----------------------+
        +--------------+UNLOAD+-+          |                  |                        +---------+                       |
        |              +------+ |         |   clk < ready.at  |       waiting.at <= ready.at +----------+ +-----+        |
        |                      |         |   +---------------+   +--------------------------+FWD waiting+-+FLUSH+-------+
        |                      |         |   |               |waiting.not_empty |          +----------+ +-----+        |
        |                      |         |   |               +-----------------+                                       |
        |              ready.not_empty  |   |               |   waiting.at > ready.at +---------+                     |
        |              +---------------+   |               +-------------------------+FWD ready+--------------------+
        |                              |   |                                         +---------+                     |
        |                              |   |                                                                          |
        |                              |clk >= ready.at                                                               |
        |                              +----------------------------------------------------------------------------+
        |                                                                                                      +----+
   +----|                                                                                                ------+LOAD+---+
   |    |                                                                                                      +----+
   |    |waiting.non_empty                                                                   +-----+ +------+  |
   |    |clk >= waiting.at                                                                   +FLUSH+-+UNLOAD+---- +
   |    |-------------------------------------------------------------------------------------+-----+ +------+    |
   |    |                                        waiting.empty                                +---------+         |
   |    |                                        +-----------------------------------------------+SIGNAL end+-+  |
   |    |                          ready.empty   |                                               +---------+ |  |
   |    |                          +-------------+                                                           |  |
   |    |                          |             |waiting.not_empty                   +----------+ +-----+   |  |
   |    |                          |             +------------------------------------+FWD waiting+-+FLUSH+-+  |
   |    |                          |             |                                    +----------+ +-----+   |  |
   |    |                          |             |          waiting.empty             +---------+            |  |
   |    |waiting.non_empty         |             +------------------------------------+FWD ready+-----------+  |
   |    |clk < waiting.at +------+ |             |           clk < ready.at           +---------+            |  |
   |    +-----------------+UNLOAD+-+             +---------------+   waiting.at <= ready.at +----------+ +-----+|
   |                      +------+ |             |               |   +----------------------+FWD waiting+-+FLUSH+
   |                              |             |               |waiting.not_empty |       +----------+ +-----+|
   |                              |             |               +-----------------+                           |
   |              ready.not_empty |             |               |  waiting.at > ready.at +---------+          |
   |              +---------------+             |               +------------------------+FWD ready+---------+
   |                              |             |                                        +---------+
   |                              |clk >= ready.at                                                            
   |                              +-----------------------------------------------------------------------+
```