**MACHINE**

|  |
| --- |
| **GCD** |

**SEES**

|  |
| --- |
| **C2** |

**VARIABLES**

|  |
| --- |
| a |

|  |
| --- |
| b |

|  |
| --- |
| gcd |

|  |
| --- |
| lcm |

|  |
| --- |
| state |

**INVARIANTS**

|  |  |
| --- | --- |
| inv1   : | a ∈ ℕ |

|  |  |
| --- | --- |
| inv2   : | b ∈ ℕ |

|  |  |
| --- | --- |
| inv3   : | gcd ∈ ℕ |

|  |  |
| --- | --- |
| inv4   : | lcm ∈ ℕ |

|  |  |
| --- | --- |
| inv5   : | state ∈ S |

**EVENTS**

|  |
| --- |
| **INITIALISATION   ≙** |

**STATUS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **ordinary** |   **BEGIN**   |  |  | | --- | --- | | act1   : | a ≔ 240240 |  |  |  | | --- | --- | | act2   : | b ≔ 150150 |  |  |  | | --- | --- | | act3   : | gcd ≔ 1 |  |  |  | | --- | --- | | act5   : | state ≔ init |  |  |  | | --- | --- | | act6   : | lcm ≔ 240240 ∗ 150150 |   **END**   |  | | --- | | **evt1   ≙** |   **STATUS**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **ordinary** |   **WHEN**   |  |  | | --- | --- | | grd1   : | a>b |   **THEN**   |  |  | | --- | --- | | act1   : | a ≔ a − b |  |  |  | | --- | --- | | act2   : | state ≔ interm |   **END**   |  | | --- | | **evt2   ≙** |   **STATUS**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **ordinary** |   **WHEN**   |  |  | | --- | --- | | grd1   : | a < b |   **THEN**   |  |  | | --- | --- | | act1   : | b ≔ b − a |  |  |  | | --- | --- | | act2   : | state≔interm |   **END**   |  | | --- | | **evt3   ≙** |   **STATUS**   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **ordinary** |   **WHEN**   |  |  | | --- | --- | | grd1   : | a = b |  |  |  | | --- | --- | | grd3   : | state ∈ {init, interm} |   **THEN**   |  |  | | --- | --- | | act1   : | gcd ≔ a |  |  |  | | --- | --- | | act2   : | lcm ≔ lcm÷a |  |  |  | | --- | --- | | act3   : | state ≔ final |   **END**  **END** | | | |