Description:

The entity generates a trigger and data signals according the chosen scene, the user chose one of different scenes that are defined in the entity (we have 5 scenes for now).

The internal output data is a cyclic counter that change from 0 to (2^ num\_of\_signals\_g) – 1, but we can also get the data and trigger signals from an external source.

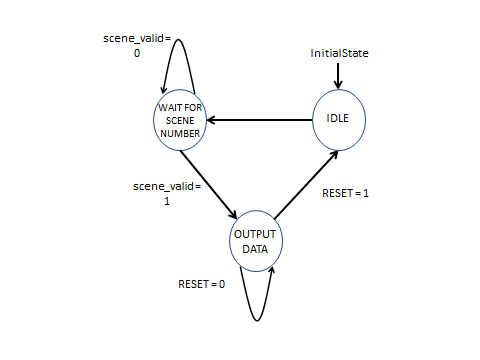
Generic table

|  |  |  |
| --- | --- | --- |
| Name | Width | Description |
| reset\_polarity\_g | 1 | '1' reset active high, '0' active low |
| enable\_polarity\_g | 1 | '1' the entity is active high, '0' entity is active low |
| data\_width\_g | 8 | defines the width of the data lines of the system |
| num\_of\_signals\_g | 4 | number of signals that will be recorded simultaneously |
| external\_en\_g | 1 | 1 -> getting the data from an external source . 0 -> dout is a counter |
| Add\_width\_g | 8 | width of address word in the WB |
| len\_d\_g | 1 | Length Depth |
| type\_d\_g | 1 | Type Depth |

Signals table

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Direction | Width | Description |
| clk | In | 1 | System clock |
| Reset | In | 1 | System reset |
| data\_in | In | 1 | External data in |
| trigger\_in | In | num\_of\_signals\_g | External trigger in |
| ADR\_I | In | Add\_width\_g | contains the address word |
| DAT\_I | In | data\_width\_g | contains the data in word |
| WE\_I | In | 1 | '1' for write, '0' for read |
| STB\_I | In | 1 | '1' for active bus operation, '0' for no bus operation |
| CYC\_I | In | 1 | '1' for bus transition request, '0' for no bus transition request |
| TGA\_I | In | (data\_width\_g)\*(type\_d\_g) | contains the type word |
| TGD\_I | In | (data\_width\_g)\*(len\_d\_g) | contains the len word |
| reg\_data | In | data\_width\_g | data to be transmitted to the WM |
| reg\_data\_valid | In | 1 | data to be transmitted to the WM validity |
| stall | In | 1 | stall - suspend wishbone transaction |
| data\_out | Out | num\_of\_signals\_g | Output data |
| trigger\_out | Out | 1 | Output trigger |
| ACK\_O | Out | 1 | '1' when valid data is transmitted to MW or for successful write operation |
| DAT\_O | Out | data\_width\_g | data transmit to MW |
| STALL\_O | Out | 1 | STALL - WS is not available for transaction |
| typ | Out | (data\_width\_g)\*(type\_d\_g) | Type |
| len | Out | (data\_width\_g)\*(len\_d\_g) | Length |
| active\_cycle | Out | 1 | CYC\_I outputted to user side |

Signal generator state machine



Output table

