Claims

1. An asset management method, said method being implemented on an integrated circuit, wherein the integrated circuit comprises a keys memory for storing keys, each key being associated with a respective asset identifier, and a data memory for storing asset information, said method comprising:

receiving an input command related to a first asset comprising a first asset identifier and asset information associated with said first asset,

computing a first address to said keys memory from said first asset identifier, said step of computing a first address comprising calculating a hash from said first asset identifier,

searching for an entry in said keys memory for said first asset, based on said first address,

allocating a new entry in said keys memory for said first asset when it is determined that no entry for said first address has been found in said keys memory,

computing a first data address to said data memory for said first asset from the address and position in the keys memory at which an entry has been allocated for said asset,

reading a data word in the data memory at said first data address,

executing the input command based on the data word read in the data memory at said first data address, and

writing back the result to the keys memory and data memory.

2. The method of claim 1, wherein each key in said keys memory is associated with a presence bit, the method further comprising, in response to the allocation of an entry, setting the presence bit associated with the entry key to an active state.

3. The method of claim 2, wherein each key and the associated presence bit form a couple and the couples are arranged in the key memory to condense couples in each data word.

4. The method of claim 1, further comprising storing said asset information in association with said asset identifier in said data memory, in response to the allocation of said entry.

5. The method of claim 1, wherein the integrated circuit further comprises at least one cache for keeping track of the last processed asset identifiers, as well as the addresses and positions at which the corresponding asset identifiers have been placed.

6. The asset management method of claim 1, further comprising the steps of:

receiving an input command related to a second asset comprising a second asset identifier and asset information associated with said second asset,

computing a second address to said keys memory from said second asset identifier, said step of computing a second address comprising calculating a hash from said asset identifier,

determining that an entry has been found in said keys memory for said second address,

computing a second data address to said data memory for said second asset from the address and position in the keys memory at which an entry has been found for said second asset,

reading a data word in the data memory at said second data address,

executing the input command based on the data word read in the data memory at said second data address, and

writing back the result to the keys memory and data memory.

7. The asset management method of claim 6, further comprising:

computing a plurality of addresses to said keys memory from each said asset identifier, said step of computing a plurality of addresses comprising calculating a hash from said asset identifier for each computed address, and

searching for an entry in said keys memory for each said asset based on each of said plurality of computed addresses.

8. The method of claim 7, wherein a plurality of memory chips are used in parallel, and said step of computing a plurality of addresses comprises calculating a different hash for each memory.

9. The method of claim 7, wherein said hashes are obtained by multiplying each asset identifier by a given coefficient, which provides a data word, and selecting some of the bits of said data word.

10. An asset management device implemented on an integrated circuit, wherein said device comprises a keys memory for storing keys in association with respective asset identifiers and a data memory for storing asset information, the device further comprising:

an address generation core configured to, in response to the reception of an input command comprising a first asset identifier and asset information, compute a first address to said keys memory from said first asset identifier, said computation of said first address comprising calculating a hash from said first asset identifier,

an entry allocation core configured to search for an entry in said keys memory for said first asset based on said computed first address and, if no entry has been found in said keys memory for said first address, to allocate an entry in said keys memory for said first asset,

a second address generation core configured to compute a first data address to said data memory for said first asset from the address and position at which an entry has been allocated in said keys memory, the data being read in the data memory at said first data address,

an execution core for executing the input command based on the data read in the data memory at said first data address, the execution core further being configured to write back the result to the keys memory and to the data memory.

11. The asset management device of claim 10, wherein the first and second address generation cores, the entry allocation core, and the execution core are pipelined.

12. The asset management device of claim 10, wherein said keys memory is configured to store each key in association with a presence bit, the presence bit being set to an active state, in response to the allocation of the entry corresponding to the entry key associated with the presence bit.

13. The asset management device of claim 12, wherein each key memory and the associated presence bit form a couple and the couples are arranged in the key memory to condense the couples in each memory data word.

14. The asset management device of claim 10, wherein the key memory and the data memory are provided on the same physical memory, said asset management device further comprising an arbiter entity so as to provide access to the physical memory from a first part responsible for keys management, including the first Address Generation Core and the entry allocation core, and a second part responsible for asset value management, including the second address generation core and the execution core, the arbiter entity being further configured to prevent both the key memory and the data memory from overlapping.

15. The asset management device of claim 10, wherein said address generation core is configured to, in response to the reception of an input command comprising a second asset identifier and asset information, compute a second address to said keys memory from said second asset identifier, said computation of said second address comprising calculating a hash from said second asset identifier,

said entry allocation core configured to search for an entry in said keys memory for said second asset based on said computed second address and,

said second address generation core configured to compute a second data address to said data memory for said second asset from the address and position at which an entry has been found in said keys memory, the data being read in the data memory at said second data address,

said execution core for executing the input command based on the data read in the data memory at said second data address, the execution core further being configured to write back the result to the keys memory and to the data memory.

16. The asset management device of claim 15, wherein the address generation core is further configured to compute a plurality of addresses to said keys memory from said asset identifier, said computation of said plurality of addresses comprising calculating hashes from said asset identifier, and

said entry allocation core is further configured to search for an entry in said keys memory for said asset based on said plurality of computed addresses.

17. The asset management device of claim 16, wherein the hashes are obtained by using the integrated circuit hardware multiplier to multiply each asset identifier by a given coefficient, which provides a data word, and selecting some of the bits of said data word.

18. The asset management device of claim 15, wherein said entry allocation core is configured to forward an auxiliary command to said second address generation core, said auxiliary command comprising the address and position at which an entry has been found or allocated for said asset, said second address generation core being configured to retrieve said address and position from said auxiliary command.