We claim:

1. A non-transitory computer-readable data storage medium storing computer-executable code executable by a replaceable item (100) to perform a method characterised in that the method comprises:

in response to receiving a request for a particular authentication value of a plurality of authentication values of the replaceable item (100) from a host device to which the replaceable item has been connected, determining whether the replaceable item has already satisfactorily responded to authentication value requests a maximum permitted number of times;

in response to determining that the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times, refusing to send the requested authentication value to the host device; and

in response to determining that the replaceable item (100) has not yet already satisfactorily responded to authentication value requests the maximum permitted number of times, sending the requested authentication value to the host device, wherein the host device is a printing device, and the replaceable item (100) is a print substance cartridge for the printing device.

2. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times without regards to which of the authentication values were requested in the authentication value requests.

3. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests for the requested authentication value the maximum permitted number of times.

4. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times without regards to which host devices sent the authentication value requests.

5. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item has already satisfactorily responded to authentication value requests from the host device the maximum permitted number of times.

6. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times without regards to which of the authentication values were requested in the authentication value requests and without regards which host devices sent the authentication value requests.

7. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily

responded to authentication value requests the maximum permitted number of times comprises:

determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests for the requested authentication value from the host device the maximum permitted number of times.

8. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether a counter of a number of times the replaceable item (100) has already satisfactorily responded to authentication value requests is equal to the maximum permitted number of times,

and wherein the method further comprises, in response to determining that the replaceable item has not yet already responded to authentication value requests the maximum permitted number of times,

incrementing the counter.

9. The non-transitory computer-readable data storage medium of claim 1, wherein determining whether the replaceable item (100) has already satisfactorily responded to authentication value requests the maximum permitted number of times comprises:

determining whether a flag corresponding to the replaceable item (100) having already responded to authentication value requests the maximum permitted number of times has been set, and wherein the method further comprises, in response to determining that the replaceable item (100) has not yet already responded to authentication value requests the maximum permitted number of times:

determining whether the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times;

in response to determining that the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times,

setting the flag.

10. The non-transitory computer-readable data storage medium of claim 1, wherein sending the authentication value comprises retrieving the requested authentication value from a table of the authentication values stored within the replaceable item (100),

and wherein the method further comprises, in response to determining that the replaceable item has not yet already responded to authentication value requests the maximum permitted number of times:

determining whether the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times;

in response to determining that the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times, functionally erasing the authentication values from the replaceable item.

11. The non-transitory computer-readable data storage medium of claim 1, wherein sending the authentication value comprises generating the requested authentication value from a cryptographic key stored within the replaceable item (100),

and wherein the method further comprises, in response to determining that the replaceable item (100) has not yet already responded to authentication value requests the maximum permitted number of times:

determining whether the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times;

in response to determining that the replaceable item (100) has now or will have now responded to authentication value requests the maximum permitted number of times, functionally erasing the cryptographic key from the replaceable item.

12. The non-transitory computer-readable data storage medium of claim 1, wherein the request is a first request, and the method further comprises:

receiving a second request from the host device, for a one-way hash value (110) of the authentication value; and

sending the one-way hash value (110) to the host device,

wherein the first request is received prior to or after the second request is received.

13. The non-transitory computer-readable data storage medium of claim 1, wherein sending the requested authentication value to the host device comprises:

determining whether the replaceable item (100) previously sent the requested authentication value;

in response to determining that the requested authentication value was previously sent, proceeding to send the requested authentication value to the host device;

in response to determining that the requested authentication value was not previously sent, determining whether the replaceable item (100) previously sent a maximum number of unique authentication values of the authentication values, the maximum number of unique authentication values less than a total number of the authentication values;

in response to determining that the maximum number of unique authentication values has not been sent, sending the requested authentication value to the host device; and

in response to determining that the maximum number of unique authentication values has been sent, refusing to send the requested authentication value to the host device.

14. A print substance cartridge (100) for a printing device, comprising:

a supply of print substance (102) for the printing device;

a non-volatile memory storing (106) a plurality of passwords (108); and

logic (104) to satisfactorily respond to a maximum permitted number of requests for the passwords to authenticate the print substance cartridge within the

printing device, wherein the requests comprise requests for a particular password of the plurality of passwords (108).

15. The print substance cartridge of claim 14, wherein the non-volatile memory (106) stores the passwords (108),

wherein the logic (104) is further to functionally erase the passwords (108) after the maximum permitted number of requests have been received.

16. The print substance cartridge of claim 14, wherein the logic (104) is further to:

respond to the maximum permitted number of request for a predetermined maximum number of the passwords (108) less than a total number of the passwords.

17. The print substance cartridge of claim 14, further comprising:

a non-volatile memory storing a plurality of hash values (110) of the passwords,

wherein the logic (104) is to respond to requests for the hash values (110) of the passwords.

18. The print substance cartridge of claim 14, wherein the print substance is one or more of:

ink, toner, two-dimensional (2D) colorant, three-dimensional (3D) printing agent, and 3D printing build material.