

CLAIMS

1. A method of removing unwanted data from original data for prohibiting unwanted data transfer between a first device 2 and at least one second device 3 along a communication pathway 4 located therebetween, the communication pathway 4 comprising at least one data channel 5 and at least one control channel 6, the method comprising:
- 5 providing a negotiation means 7 at a position along the at least one control channel 6;
- 10 providing original data 8 comprising control data 9 and associated protocol data 10 from a data source, the control data 9 comprising wanted and unwanted data;
- checking that the control data 9 indicates that the associated protocol data 10 conforms to at least one predetermined protocol mode criteria at
- 15 the negotiation means;
- terminating the negotiation means 7 and determining the control data 9 to be unwanted data where the control data 9 does not indicate the associated protocol data 10 to conform to the at least one protocol mode criteria; and
- 20 leaving resulting data 16 which comprises control data 9 which is substantially free of unwanted data enabling associated protocol data 10 transmission along the data channel 5.

2. A method of removing unwanted data from original data according to claim 1, wherein terminating the negotiation means 7 comprises discarding as unwanted data any control data 9 that does not indicate the associated protocol data to conform to the at least one protocol mode criteria.
- 5 3. A method of removing unwanted data from original data according to claim 1 or claim 2, wherein terminating the negotiation means 7 comprises generating and forwarding a response to the first data device 2 indicating the control data 9 is unwanted data.
4. A method of removing unwanted data from original data according to any
10 preceding claim wherein terminating the negotiation means 7 comprises transforming the unwanted data and forwarding a response to the first data device 2 indicating the control data 9 to be unwanted data.
5. A method of removing unwanted data from original data according to any preceding claim, comprising prior to checking that the control data 9 associated with protocol data 10 conforms to at least one predetermined protocol mode criteria, the method further comprising the step of pre-determining one or more protocols to support 13;
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 - checking that control data 9 indicates the associated protocol data 10 to conform to the one or more protocols to support, and
 - 20 - terminating the negotiation means 7 where the control data 9 does not indicate associated protocol data 10 to conform to any one or more of the protocols to support.

6. A method of removing unwanted data from wanted data according to any preceding claim, wherein the control channel 6 is configured to be bi-directional.
7. A method of removing unwanted data from original data according to any preceding claim, further comprising predetermining a directionality constraint on the at least one supported protocol data to be transported along the data channel 5a, 5b, 5c.
8. A method of removing unwanted data from original data according to claim 7, further comprising enforcing the directionality constraint on any protocol data transfer along the data channel 5a, 5b, 5c.
9. A method of removing unwanted data from original data according to claim 7 or claim 8, further comprising discarding any protocol data, protocol mode data or other data that violates the directionality constraint.
10. A method of removing unwanted data from original data according to any preceding claim further comprising preventing the negotiation along the control channel 6 of unwanted data thereby triggering the disabling of access to predetermined hardware of the second data device 3 from the first data device 2 or vice versa.
11. A method of removing unwanted data from original data according to any preceding claim, further comprising the following steps;
 - identifying at least one return lane 6 in the communication pathway 4 from each of the at least one second data device 3,

- discarding control data 9 in said return lane that does not comprise control data 9 indicating associated protocol data 10 which conforms to the one or more protocol mode criteria.

12. A method of removing unwanted data from original data according to any
5 preceding claim, further comprising the following steps;

- pre-determining a range of acceptable variables against which the protocol data mode criteria is determined.

13. A method of removing unwanted data from original data according to
claim 12, wherein the method further comprises enabling modification of
10 the variables at a trusted device comprising either the first device 2 or second device 3.

14. A method according to any preceding claim wherein the at least one data
channel 5a, 5b, 5c comprises a communications lane where the data
transfer occurs at a faster rate than the data transfer along the control
15 channel 6, wherein the at least one data channel is a high speed channel.

15. A method according to claim 14, wherein the protocol data 10 and any
other data is passed along the fast speed communications pathway forming the data channel 5a, 5b, 5c without any further negotiation means being applied along the control channel 6.

20 16. A method according to claim 14 or 15, wherein the high speed channel is unidirectional permitting passage of data from the first data device 2 to the at least one second data device 3 only (or vice versa).

17. A method of removing unwanted data from original data according to any of claims 14 to 16 further comprising the following steps;

assessing at least one channel in the communication pathway 4 for passage of the original data 8, identifying high speed channels and verifying they are unidirectional;

5 if any high speed channels are not unidirectional, discarding all original data 8 attempting to pass in the reverse direction.

18. A method of removing unwanted data from original data according to any preceding claim further comprising the following step;
retaining control data 9 which has been discarded to enable use elsewhere.

10 19. A method according to claim 18 wherein there is provided a third device and the method further comprises forwarding the discarded data to the third device.

20. A method according to any preceding claim, wherein the predetermined protocol mode criteria is defined as a protocol mode comprising an image
15 data type.

21. A method of removing unwanted data from original data according to claim 20, wherein the image data type conforms to any one or more of display resolution, colour depth and/or frame rate data types.

22. A method according to any preceding claim, wherein the predetermined
20 protocol mode criteria is defined as a protocol mode comprising at least one audio data type.

23. A method according to claim 22, wherein the at least one audio data type conforms to any one or more of audio protocol, audio sampling frequency,

audio sampling rate, number of audio channels, but rate of audio channels, and directionality of audio data.

24. A device for assuring unwanted data is removed from original data arranged to implement the method steps of any of claims 1 to 23 comprising:
- 5 a first connection 12a,
 a second connection 12b spaced apart from the first connection 12a,
 a communications pathway 4 positioned between the first connection 12a and second connection 12b, the communications pathway 4 comprising
- 10 at least one data channel 5a, 5b, 5c and at least one control channel 6 separate and distinct from the data channel 5a, 5b, 5c, wherein the control channel 6 comprises a negotiation means 7.
25. A device according to claim 24, wherein the negotiation means 7 comprises a hardware core comprising hardware components.
- 15 26. A device for assuring unwanted data is removed from original data according to claim 25 wherein the hardware core comprises a Field Programmable Gate Array, an Application Specific Integrated Circuit, a general purpose platform with appropriate software or a dedicated circuit.
27. A device for assuring unwanted data is removed from original data
- 20 according to any of claims 24 to 26, the device further comprising a processor having software to be executed to provide at least a portion of the negotiation along the control channel 6.

28. A device for assuring unwanted data is removed from original data according to any of claims 24 to 27 wherein at least one of the first connection and the second connection comprises a display port.
29. A device for assuring unwanted data is removed from original data according to any of claims 24 to 28 comprising at least one further connection.
30. A device for assuring unwanted data is removed from original data according to any of claims 24 to 29, wherein the at least one data channel 5a, 5b, 5c comprises a uni-directional channel.
31. A device for assuring unwanted data is removed from original data according to claim 30, wherein the uni-directional channel comprises a hardware component.
32. A device for assuring unwanted data is removed from original data according to any of claims 24 to 31, wherein the at least one control channel 6 is bi-directional.
33. A computational device comprising a device for assuring unwanted data is removed from original data according to any of claims 24- 32.
34. A peripheral device located externally to a first device comprising a device for assuring unwanted data is removed from original data according to any of claims 24- 32.