CLAIMS:

1. A computer-implemented method for selectively processing data, the computer-implemented method comprising:

receiving, by a service device, a request for access from a sub-device, wherein the request for access comprises sub-device information associated with the sub-device and is to enable the sub-device to access a containerised application of a plurality of containerised applications executed by the service device;

receiving, by the service device, authorisation of the request for access, the authorisation being based at least in part on the sub-device information;

receiving, by the service device, sub-device data from the sub-device, wherein the sub-device data is generated by the sub-device;

broadcasting, by the service device, the sub-device data to a corresponding multicast network channel that is accessible by the plurality of containerised applications of the service device, wherein the corresponding multicast network channel is exclusively associated with the sub-device over a plurality of sub-devices configured for communication with the service device;

receiving, by the containerised application of the plurality of containerised applications, the sub-device data from the corresponding multicast network channel;

processing, by the containerised application, the sub-device data to generate processed data; and

transmitting, by the service device and to a data management device, the processed data.

2. The computer-implemented method of claim 1, further comprising:

receiving, by a user interface of the data management device, authorisation credentials;

generating, by the data management device, an authorisation token based at least in part on the authorisation credentials; and

transmitting the authorisation token to the service device.

3. The computer-implemented method of claim 1 or claim 2, further comprising transmitting, by the service device, the request for access to the data management device.

4. The computer-implemented method of claim 3 when dependent on claim 2, wherein receiving authorisation to enable access comprises receiving the authorisation token.

5. The computer-implemented method of any one of claims 1 to 4, further comprising storing, by the data management device, the processed data.

6. The computer-implemented method of any one of claims 1 to 5, wherein the sub-device information comprises one or more of a sub-device serial number, a sub-device Media Access Control (MAC) address, a sub-device model number, a sub-device identifier and a random key.

7. The computer-implemented method of any one of claims 1 to 6, wherein the sub-device comprises a sensor and the sub-device data comprises sensor data.

8. The computer-implemented method of any one of claims 1 to 7, wherein the multicast network channel is a multicast Internet Protocol (IP) address or an application-layer multicast channel.

9. The computer-implemented method of any one of claims 1 to 8, wherein processing the sub-device data comprises determining one or more sub-device data metrics based at least in part on the sub-device data.

10. The computer-implemented method of any one of claims 1 to 9, further comprising:
generating a private key;
generating a public key that is associated with the private key; and
associating, in a sub-device record, the public key with the sub-device.

11. The computer-implemented method of claim 10, wherein the private key and the public key are generated by the service device; and
wherein the computer-implemented method further comprises one or more of:
providing the private key to the data management device;
providing the public key to the data management device;
providing the private key to the containerised application;
providing the public key to the containerised application; and/or

providing the public key to the sub-device.

12. The computer-implemented method of claim 10, wherein the private key and the public key are generated by the data management device; and

wherein the computer-implemented method further comprises one or more of:

providing the private key to the service device;

providing the public key to the service device;

providing the private key to the containerised application;

providing the public key to the containerised application; and/or

providing the public key to the sub-device.

13. The computer-implemented method of any one of claims 10 to 12, further comprising encrypting, by the service device and using the public key, the received sub-device data prior to broadcasting the sub-device data to the multicast network channel, thereby generating encrypted sub-device data.

14. The computer-implemented method of claim 13, wherein:

broadcasting the sub-device data to the multicast network channel comprises broadcasting the encrypted sub-device data to the multicast network channel; and

receiving the sub-device data from the multicast network channel comprises receiving the encrypted sub-device data.

15. The computer-implemented method of claim 14, further comprising decrypting, by the containerised application and using the private key, the encrypted sub-device data received from the multicast network channel, prior to processing the sub-device data.

16. The computer-implemented method of any one of claims 10 to 15, further comprising encrypting, by the containerised application and using the public key, the processed data to generate encrypted processed data.

17. The computer-implemented method of claim 16 when dependent on claim 5, wherein:

transmitting the processed data comprises transmitting the encrypted processed data; and

storing the processed data comprises storing the encrypted processed data.

18. The computer-implemented method of any one of claims 1 to 17, further comprising:

transmitting, by the service device and to the data management device, a request to initialise a new containerised application;

retrieving, by the service device, the new containerised application;

initialising, by the service device, the new containerised application; and

transmitting, by the service device, an installation confirmation indicating a successful initialisation of the containerised application to the data management device;

wherein the containerised application of the plurality of containerised applications is the new containerised application.

19. The computer-implemented method of claim 18, further comprising:

receiving, by the data management device, the request to initialise the new containerised application; and

transmitting, by the data management device, a license key to the service device, the license key being associated with the containerised application.

20. A data management system for selectively processing data, the data management system comprising:

a service device comprising:

at least one service device processor; and

service device memory storing:

a plurality of containerised applications executable by the at least one service device processor; and

program instructions accessible by the at least one service device processor, and configured to cause the at least one service device processor to:

receive a request for access from a sub-device, wherein the request for access comprises sub-device information associated with the sub-device and is to enable the sub-device to access a containerised application of the plurality of containerised applications;

receive authorisation of the request for access, the authorisation being based at least in part on the sub-device information;

receive sub-device data from the sub-device, wherein the sub-device data is generated by the sub-device;

broadcast the sub-device data to a corresponding multicast network channel that is accessible by the plurality of containerised applications, wherein the corresponding multicast network channel is exclusively associated with the sub-device over a plurality of sub-devices configured for communication with the service device;

execute the containerised application of the plurality of containerised applications, the containerised application being configured to:

receive the sub-device data from the multicast network channel; and

process the sub-device data to generate processed data; and

transmit the processed data to a data management device.

21. The data management system of claim 20, further comprising the data management device, the data management device comprising:

at least one data management device processor; and

data management device memory storing data management program instructions accessible by the at least one data management device processor, and configured to cause the at least one data management device processor to:

receive the processed data.

22. The data management system of claim 21, wherein the data management program instructions are further configured to cause the at least one data management device processor to:

receive authorisation credentials;

generate an authorisation token based at least in part on the authorisation credentials; and

transmit the authorisation token to the service device, thereby providing authorisation to enable access.

23. The data management system of any one of claims 20 to 22, wherein the service device program instructions are further configured to cause the at least one service device processor to transmit the request for access to the data management device.

24. The data management device of claim 23 when dependent on claim 22, wherein the service device program instructions are further configured to cause the at least one service device processor to receive the authorisation token, thereby receiving authorisation to enable access.

25. The data management system of claim 21 or any one of claims 22 to 24 when dependent on claim 21, wherein the data management program instructions are further configured to cause the at least one data management device processor to store the processed data.

26. The data management system of any one of claims 20 to 25, wherein the sub-device information comprises one or more of a sub-device serial number, a sub-device Media Access Control (MAC) address, a sub-device model number, a sub-device identifier and a random key.

27. The data management system of any one of claims 20 to 26, wherein the sub-device comprises a sensor and the sub-device data comprises sensor data.

28. The data management system of any one of claims 20 to 27, wherein the multicast network channel is a multicast Internet Protocol (IP) address or an application-layer multicast channel.

29. The data management system of any one of claims 20 to 28, wherein processing the sub-device data comprises determining one or more sub-device data metrics based at least in part on the sub-device data.

30. The data management system of any one of claims 20 to 29, wherein the service device program instructions are further configured to cause the at least one service device processor to:

generate a private key based at least in part on the sub-device information;
generate a public key that is associated with the private key; and
associate, in a sub-device record, the public key with the sub-device.

31. The data management system of claim 30, wherein the service device program instructions are further configured to cause the at least one service device processor to:

provide the private key to the data management device;

provide the public key to the data management device;

provide the private key to the containerised application;

provide the public key to the containerised application; and/or

provide the public key to the sub-device.

32. The data management system of claim 21 or any one of claims 22 to 31 when dependent on claim 21, wherein the data management program instructions are further configured to cause the at least one data management device processor to:

generate a private key based at least in part on the sub-device information;

generate a public key that is associated with the private key; and

associate, in a sub-device record, the public key with the sub-device.

33. The data management system of claim 32, wherein the data management program instructions are further configured to cause the at least one data management device processor to:

provide the private key to the service device;

provide the public key to the service device;

provide the private key to the containerised application;

provide the public key to the containerised application; and/or

provide the public key to the sub-device.

34. The data management system of any one of claims 30 to 33, wherein the service device program instructions are further configured to cause the at least one service device processor to encrypt the received sub-device data using the public key, prior to broadcasting the sub-device data to the multicast network channel, thereby generating encrypted sub-device data.

35. The data management system of claim 34, wherein:

broadcasting the sub-device data to the multicast network channel comprises broadcasting the encrypted sub-device data to the multicast network channel; and

receiving the sub-device data from the multicast network channel comprises receiving the encrypted sub-device data.

36. The data management system of claim 35, wherein the program instructions are further configured to cause the at least one service device processor to execute the containerised application of the plurality of containerised applications, the containerised application being configured to decrypt the encrypted sub-device data received from the multicast network channel using the private key, prior to processing the sub-device data.

37. The data management system of any one of claims 30 to 36, wherein the program instructions are further configured to cause the at least one service device processor to execute the containerised application of the plurality of containerised applications, the containerised application being configured to encrypt the processed data to generate encrypted processed data.

38. The data management system of claim 37 when dependent on claim 25, wherein transmitting the processed data comprises transmitting the encrypted processed data; and storing the processed data comprises storing the encrypted processed data.

39. The data management system of any one of claims 20 to 38, wherein the program instructions are further configured to cause the at least one service device processor to:

transmit a request to initialise a new containerised application to the data management device;

retrieve the new containerised application;

initialise the new containerised application; and

transmit an installation confirmation indicating successful initialisation of the containerised application to the data management device;

wherein the containerised application of the plurality of containerised applications is the new containerised application.

40. The data management system of claim 39 when dependent on claim 21, wherein the data management program instructions are further configured to cause the at least one data management device processor to:

receive the request to initialise the new containerised application; and

transmit a licence key to the service device, the license key being associated with the containerised application.