CLAIMS

1. A network entity for wireless communication with an AI/ML Service Registry, the AI/ML Service Registry being configured to manage a subscription for notifications related to a Federated Learning (FL) service, the network entity comprising:

at least one memory; and

at least one processor coupled with the at least one memory and configured to cause the network entity to:

send a subscription request to the AI/ML Service Registry, wherein the subscription request comprises a request to receive information on at least one application layer event type; and

receive, from the AI/ML Service Registry, information related to the at least one application layer event type.

2. A network entity according to claim 1, the network entity further configured to receive a subscription confirmation notification.

3. A network entity according to claim 2, wherein the subscription confirmation notification comprises a unique identifier for the subscription.

4. A network entity according to any preceding claim, wherein the application layer event type is at least one of: an availability or unavailability of one or more candidate FL members; an availability change of a selected FL member; an FL service Application Programming Interface (API) update; an update on a computational load of a selected FL member; an update on an energy consumption of a selected FL member; an update on FL model monitoring information; a change in capability of an FL member; an update relating to the functioning of an FL service; or, an update relating to system load conditions.

5. A network entity according to any preceding claim, wherein a FL member is one of: a vertical application layer (VAL) server; an application function; an application enabler entity; an edge enabler entity, an analytics enabler entity; a 5G network data analytics

function (NWDAF); a management domain analytics service (MDAS); an edge server, a cloud server, a VAL user equipment (UE); a UE; or, a UE application.

6. A network entity according to any preceding claim, wherein the subscription request further comprises at least one of: identity information of the subscribing entity; a machine learning (ML) model ID; a ML model profile; a request for information on a target area; a requested time of validity for the subscription; an FL member type; an FL member ID; a list of UE IDs for which the subscription applies; a list of UE types for which the subscription applies; a PLMN ID; a service ID; service API criteria; notification reception information; ML model interoperability information; or ML vendor interoperability information.

7. A network entity according to any preceding claim, wherein the network entity is one of: a vertical application layer (VAL) server; an application function; an application enabler entity; an edge enabler entity, an edge server, a cloud server, a northbound API invoker, an FL service consumer, an analytics enabler entity; a 5G network data analytics function (NWDAF); a management domain analytics service (MDAS); a VAL user equipment (UE); or, a UE application.

8. A processor for wireless communication with an AI/ML Service Registry, the AI/ML Service Registry being configured to manage subscription for notifications related to a Federated Learning (FL) service, the processor comprising:

at least one controller coupled with at least one memory and configured to cause the processor to:

send a subscription request to the AI/ML Service Registry, wherein the subscription request comprises a request to receive information on at least one application layer event type; and

receive, from the AI/ML Service Registry, information related to the at least one application layer event type.

9. An AI/ML Service Registry for managing subscriptions related to a Federated Learning (FL) service, the AI/ML Service Registry comprising:

at least one memory; and

at least one processor coupled with the at least one memory and configured to cause the AI/ML Service Registry to:

obtain, from a subscriber entity, a subscription request, wherein the subscription request comprises a request to receive information on at least one application layer event type;

authorize subscription of the subscriber entity; and

notify the subscriber entity of information related to the at least one application layer event type.

10. An AI/ML Service Registry according to claim 9, wherein the AI/ML Service Registry is one of: a CAPIF core function, an edge platform repository, a cloud platform repository, an application layer analytics data repository function (A-ADRF), an ADRF, or a network repository function (NRF).

11. An AI/ML Service Registry according to claim 9 or claim 10, the AI/ML Service Registry further configured to send a subscription confirmation notification to the subscriber entity.

12. An AI/ML Service Registry according to any one of claims 9 to 11, wherein the authorizing comprises at least one of: checking permissions of the subscriber entity to be notified of application layer events; registering the subscriber entity to be notified of application layer events.

13. An AI/ML Service Registry according to any of claims 9 to 12, wherein the authorizing comprises at least one of: sending a request to an AI/ML Pipeline Manager to check permissions of the subscriber entity to be notified of application layer events; or, sending a request to the AI/ML Pipeline Manager to register the subscriber entity to be notified of application layer events.

14. An AI/ML Service Registry according to any one of claims 9 to 13, the AI/ML Service Registry further configured to receive a trigger notification from at least one FL member indicating a change in the availability of the FL member, or a registration of the FL member to the FL service.

15. An AI/ML Service Registry according to claim 14, wherein the AI/ML Service Registry is further configured to generate information relating to an application layer event based on the trigger notification.

16. A method for wireless communication between a subscriber entity and an AI/ML Service Registry, the AI/ML Service Registry being configured to manage subscription for notifications related to a Federated Learning (FL) service, the method comprising:

obtaining, by the AI/ML Service Registry, a subscription request comprising a request to receive information on at least one application layer event type;

authorizing, by the AI/ML Service Registry, subscription of the subscriber entity;

notifying the subscriber entity, by the AI/ML Service Registry, of information related to the at least one application layer event type.

17. The method of claim 16, further comprising:

sending, by the AI/ML Service Registry to the subscriber entity, a subscription confirmation notification comprising a unique identifier for the subscription; and

receiving, at the subscriber entity, the subscription confirmation notification.

18. The method of claim 16, wherein authorizing the subscription of the subscriber entity comprises:

checking, by the AI/ML Service Registry, permissions of the subscriber entity to be notified of application layer events; and

registering, by the AI/ML Service Registry, the subscriber entity to be notified of the application layer events.

19. The method of claim 16, further comprising:

receiving, at the AI/ML Service Registry, a trigger notification from at least one FL member indicating a change in availability of the at least one FL member; and

generating, by the AI/ML Service Registry, the information related to the at least one application layer event type based on the trigger notification.

20. The method of claim 16, wherein the at least one application layer event type comprises at least one of: an availability or unavailability of one or more candidate FL members; an availability change of a selected FL member; an FL service Application Programming Interface (API) update; an update on a computational load of a selected FL member; an update on an energy consumption of a selected FL member; an update on FL model monitoring information; a change in capability of an FL member; an update relating to the functioning of an FL service; or an update relating to system load conditions.