

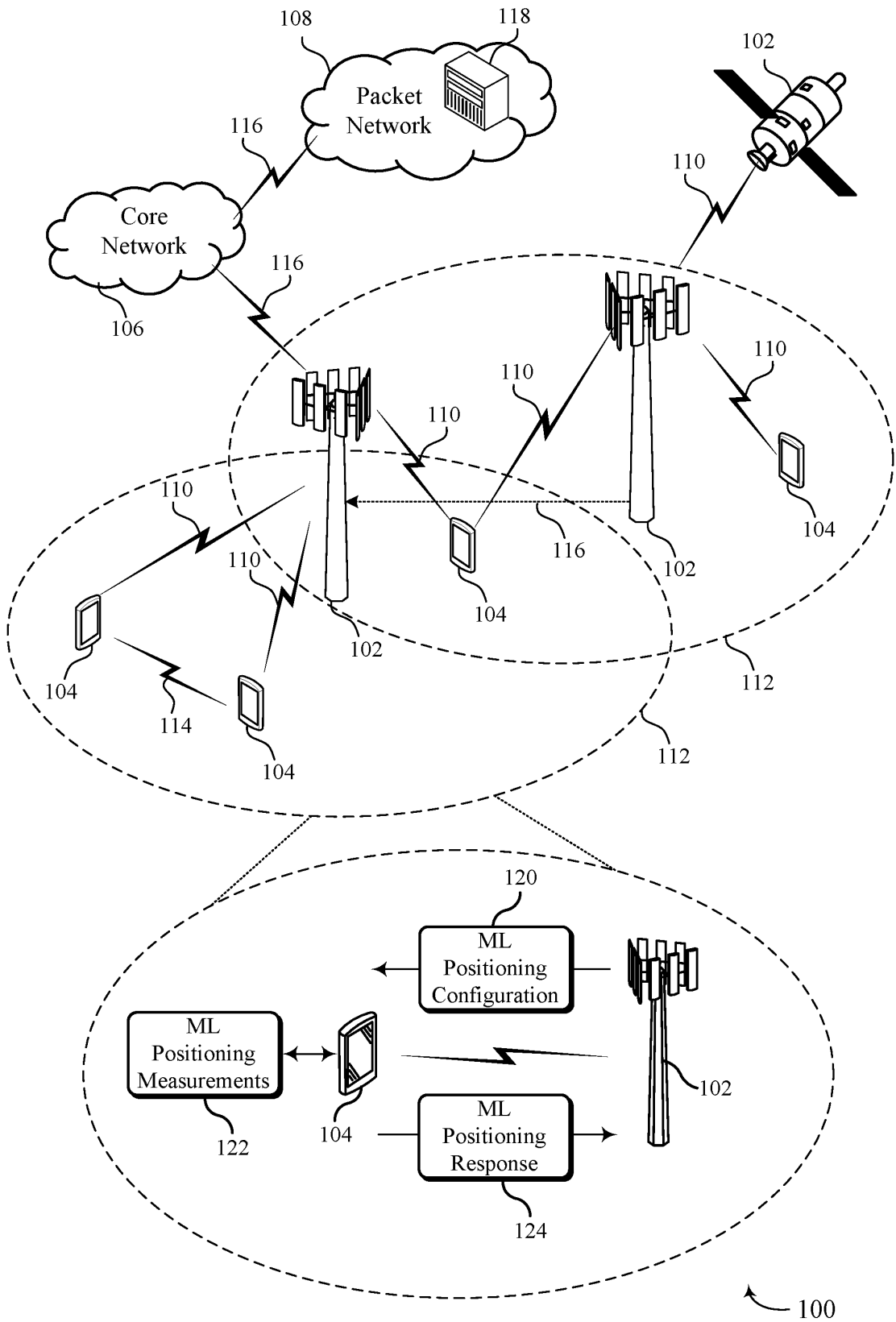


FIG. 1

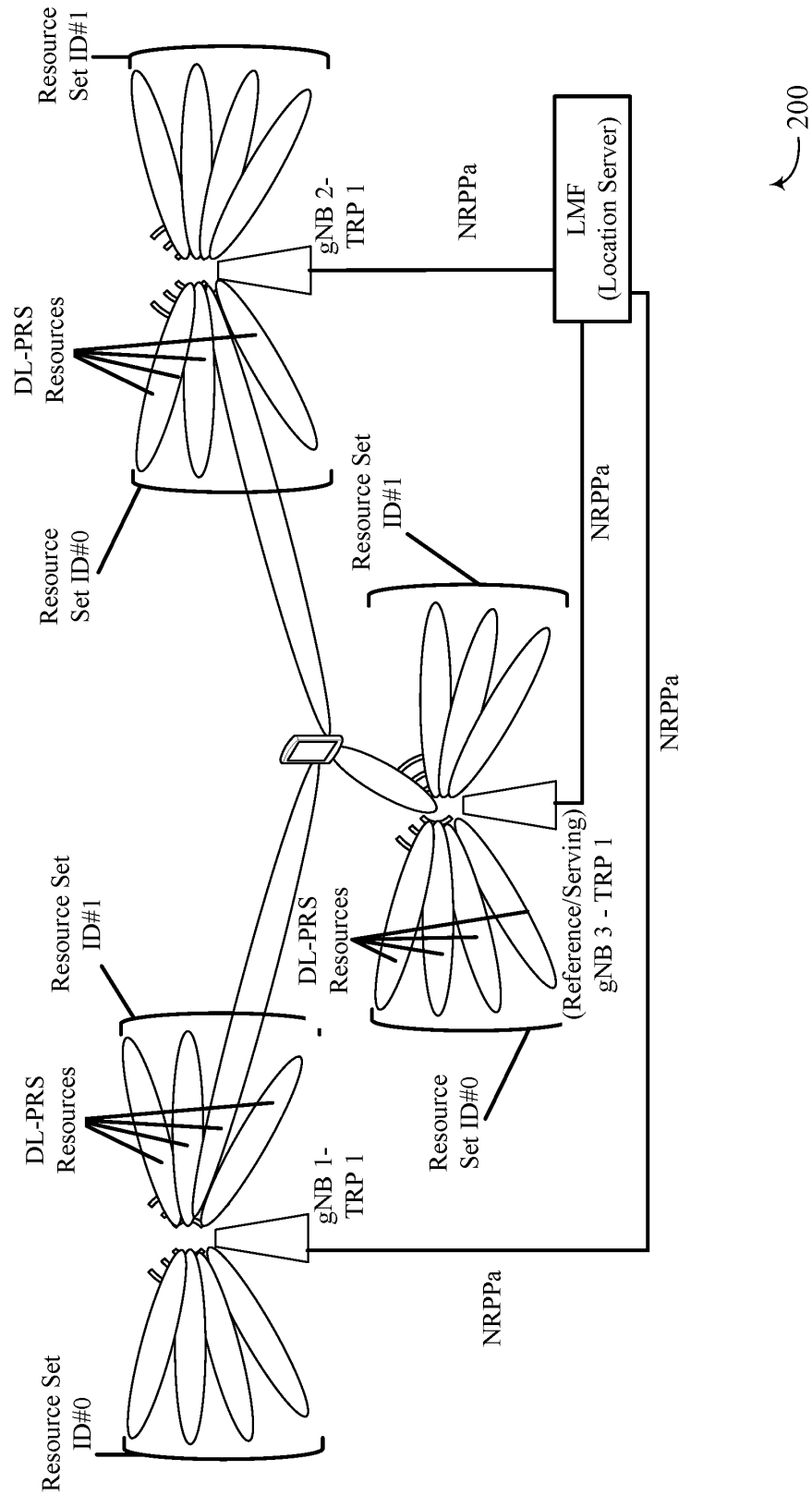


FIG. 2

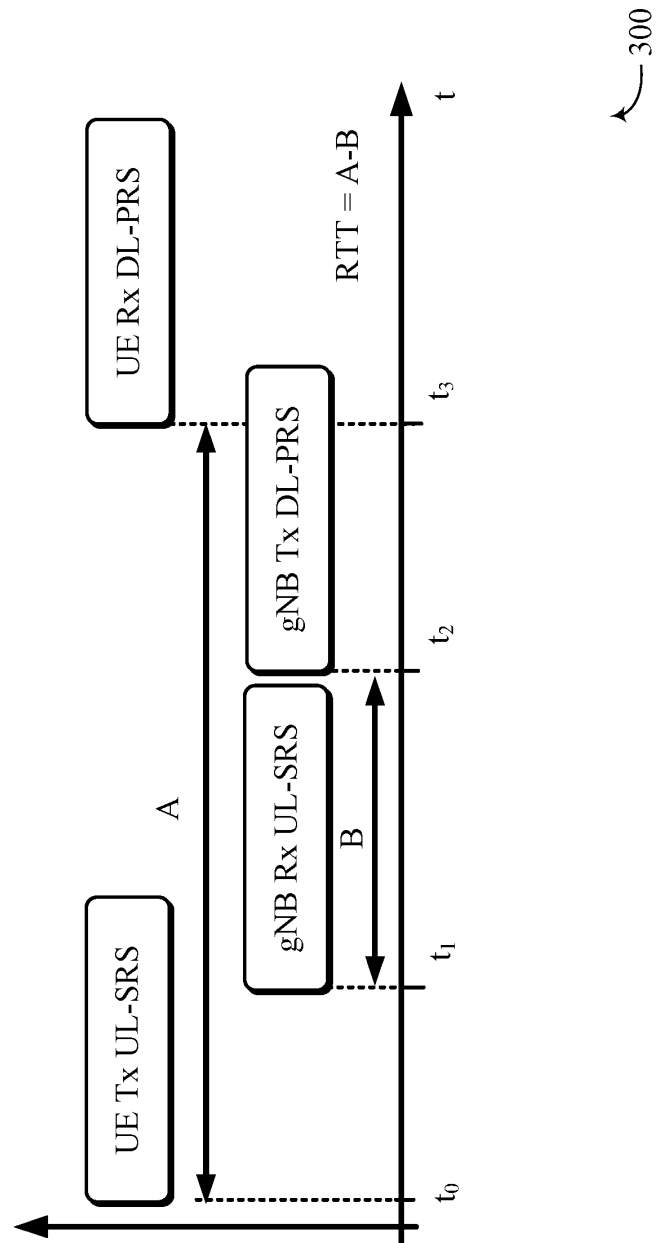


FIG. 3

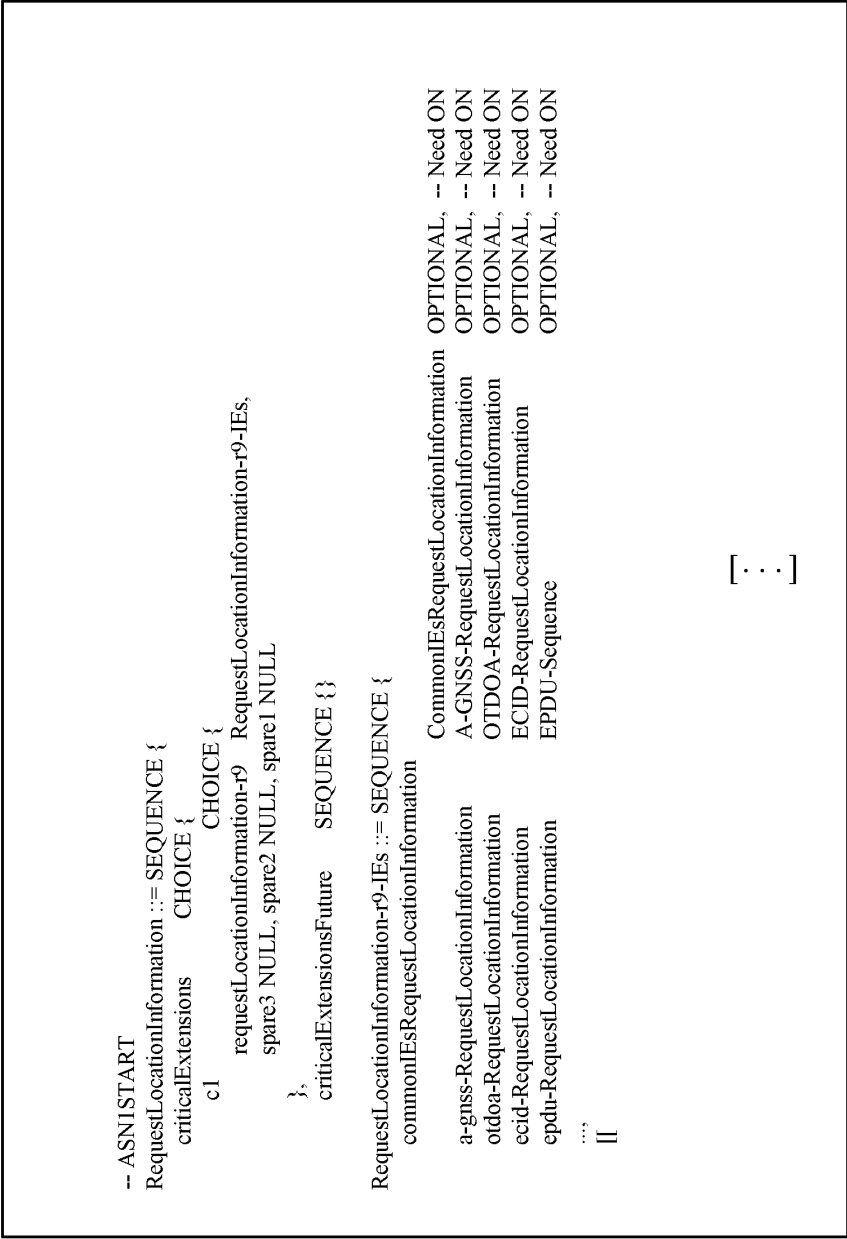


FIG. 4a

400

```

[
.
.
.]

sensor-RequestLocationInformation-r13

    tbs-RequestLocationInformation-r13
    wlan-RequestLocationInformation-r13
    bt-RequestLocationInformation-r13
    II,
    II  nr-ECID-RequestLocationInformation-r16
        NR-ECID-RequestLocationInformation-r16
        OPTIONAL, -- Need ON
    nr-Multi-RTT-RequestLocationInformation-r16
        NR-Multi-RTT-RequestLocationInformation-r16
        OPTIONAL, -- Need ON
    nr-DL-AoD-RequestLocationInformation-r16
        NR-DL-AoD-RequestLocationInformation-r16
        OPTIONAL, -- Need ON
    nr-DL-TDOA-RequestLocationInformation-r16
        NR-DL-TDOA-RequestLocationInformation-r16
        OPTIONAL, -- Need ON
    II
}
-- ASN1STOP

```

FIG. 4b

400

FIG. 4b

```
-- ASN1START
ProvideLocationInformation ::= SEQUENCE {
criticalExtensions    CHOICE {
    c1
        provideLocationInformation-r9 ProvideLocationInformation-r9-IEs,
        spare3 NULL, spare2 NULL, spare1 NULL
    },
criticalExtensionsFuture SEQUENCE {}
}
ProvideLocationInformation-r9-IEs ::= SEQUENCE {
commonIEsProvideLocationInformation
    a-gnss-ProvideLocationInformation OPTIONAL,
    otdoa-ProvideLocationInformation OPTIONAL,
    ecid-ProvideLocationInformation  OPTIONAL,
    epdu-ProvideLocationInformation  OPTIONAL,
    ...,
    []
}
```

500

FIG. 5a

```

[ . . . ]

sensor-ProvideLocationInformation-r13          Sensor-ProvideLocationInformation-r13          OPTIONAL,
tbs-ProvideLocationInformation-r13            TBS-ProvideLocationInformation-r13          OPTIONAL,
wlan-ProvideLocationInformation-r13           WLAN-ProvideLocationInformation-r13        OPTIONAL,
bt-ProvideLocationInformation-r13             BT-ProvideLocationInformation-r13           OPTIONAL
||,
||  nr-ECID-ProvideLocationInformation-r16    NR-ECID-ProvideLocationInformation-r16      OPTIONAL,
nr-Multi-RTT-ProvideLocationInformation-r16  NR-Multi-RTT-ProvideLocationInformation-r16 OPTIONAL,
nr-DL-AoD-ProvideLocationInformation-r16     NR-DL-AoD-ProvideLocationInformation-r16   OPTIONAL,
nr-DL-TDOA-ProvideLocationInformation-r16    NR-DL-TDOA-ProvideLocationInformation-r16  OPTIONAL
||
}
--ASN1STOP

```

FIG. 5b

500

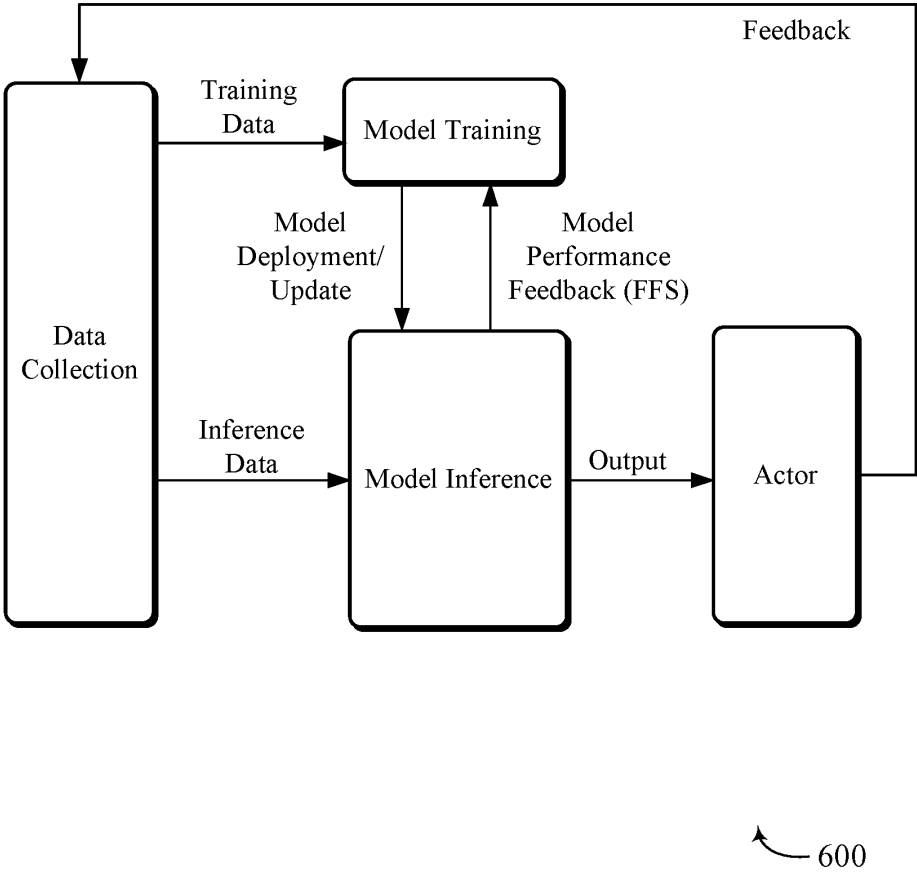


FIG. 6

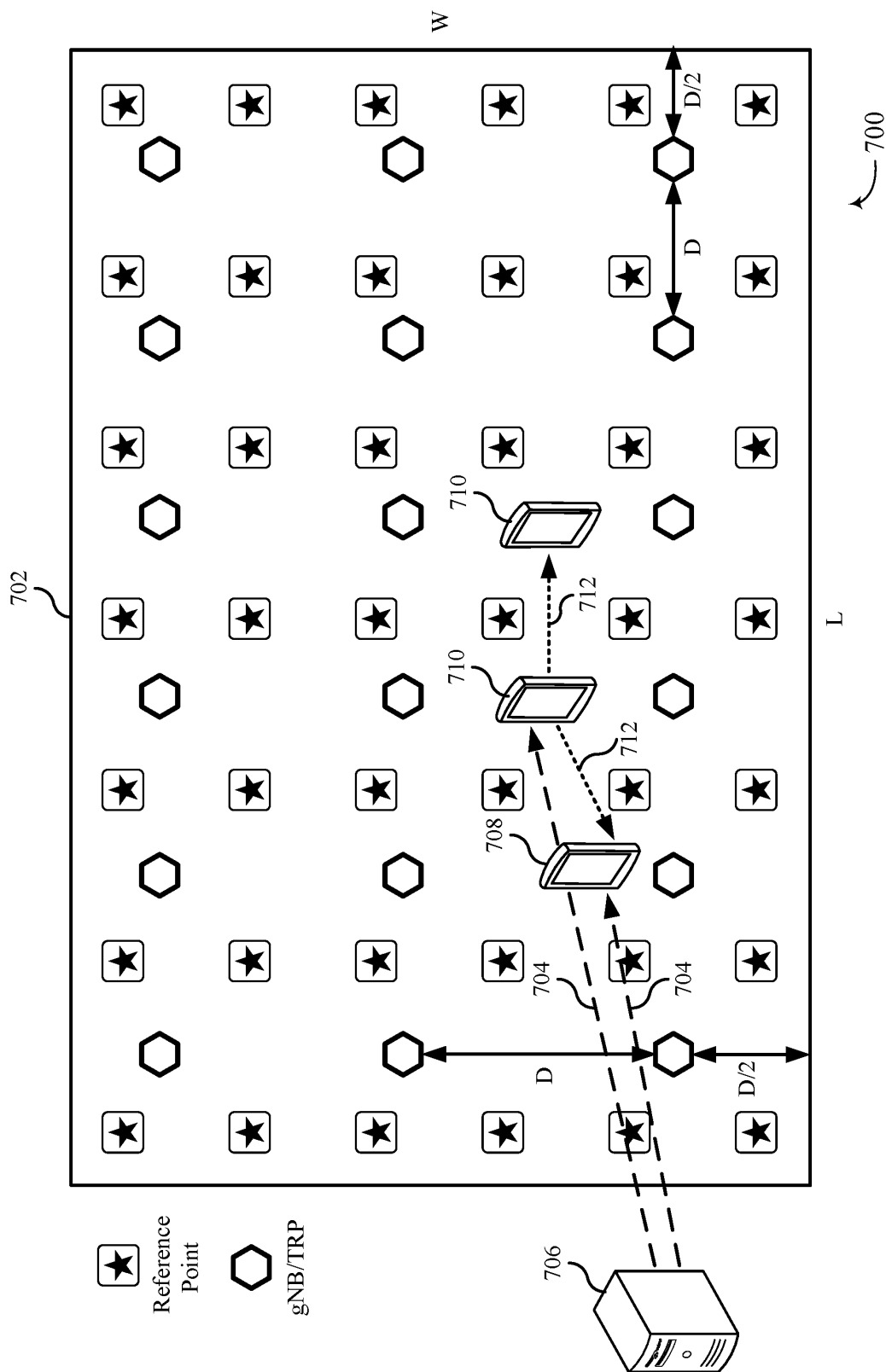


FIG. 7

FIG. 7

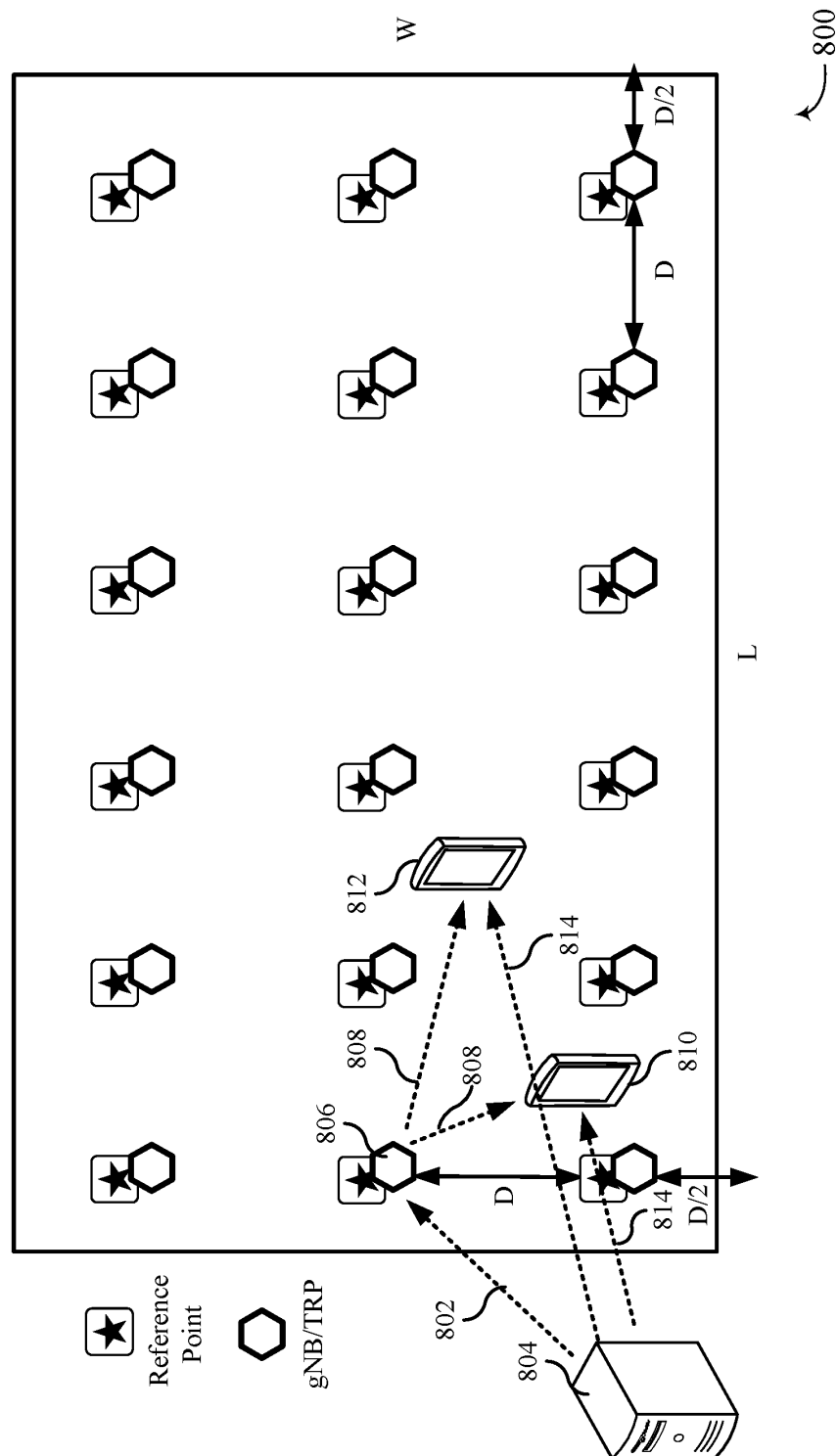


FIG. 8

```
-- ASN1START
NR-Direct-AI-ML-RequestAssistanceData ::= SEQUENCE {
  nr-PhysCellID          NR-PhysCellID              OPTIONAL,
  nr-AdType              BIT STRING {dl-prs (0),
                                         ,posCalc (1), sl-prs (2) } (SIZE (1..8)),
  nr-Training-Type       BOOLEAN{Online, Offline}
  nr-Learning-Method     BIT STRING{Supervised (0), Semi-supervised (1), Unsupervised (2)}
  ...,
  ||
  nr-PosCalcAssistanceRequest  BIT STRING {
    trpLoc          (0),
    beamInfo(1),
    rtdInfo         (2),
    beamAntInfo     (3),
    losNlosInfo     (4),
    FP-GndTruth-Ref-Loc (5),
    } (SIZE (1..8)) OPTIONAL,
  ||
  nr-on-demand-AI-ML-DL-PRS-Request          NR-On-Demand-DL-PRS-Request-r17      OPTIONAL,
  pre-configured-AI-ML-AssistanceDataRequest  ENUMERATED { true }              OPTIONAL
  ||
}
-- ASN1STOP
```

FIG. 9

900

```
-- ASN1START
nr-DL-PRS-AI-ML-AssistanceData      NR-DL-PRS-AssistanceData-r16      OPTIONAL, -- Need ON
nr-SelectedDL-PRS-AI-ML-IndexList    NR-SelectedDL-PRS-IndexList-r16    OPTIONAL, -- Need ON

NR-Gnd-Truth-LocationInfo ::= SEQUENCE (SIZE (1..nrMaxFreqLayers)) OF
    NR-Gnd-Truth-LocationInfoPerFreqLayer
NR-Gnd-Truth-LocationInfoPerFreqLayer ::= SEQUENCE
{
    GND-referencePoint                ReferencePoint-r16                OPTIONAL, -- Cond NotSameAsPrev
    GND-Reference-LocationInfoList    SEQUENCE (SIZE (1..nrMaxTRPsPerFreq-r16)) OF
        GND-Reference-LocationInfoElement,
}

GND-Reference-LocationInfoElement ::= SEQUENCE {
    dl-PRS-ID-r16                    INTEGER (0..255),
    nr-PhysCellID-r16                NR-PhysCellID-r16                OPTIONAL, -- Need ON
    nr-CellGlobalID-r16              NCGI-r15                         OPTIONAL, -- Need ON
    nr-ARFCN-r16                     ARFCN-ValueNR-r15                OPTIONAL, -- Need ON
    associated-DL-PRS-ID-r16          INTEGER (0..255)                 OPTIONAL, -- Need OP
    GND-Reference-Location            CHOICE{AbsoluteLocation, RelativeLocation}
    OPTIONAL, -- Need OP
    GND-Reference-Location-Source
    trp-DL-PRS-ResourceSets-r16      SEQUENCE (SIZE(1..nrMaxSetsPerTrpPerFreqLayer-r16)) OF
        DL-PRS-ResourceSets-TRP-Element-r16 OPTIONAL, -- Need OP
    GND-Reference-measurementTime    CHOICE {
        systemFrameNumber-r16      NR-TimeStamp-r16,
        utc-time-r16                UTCtime,
        GNSS-time,
        ...
    }
    ...
}
```

FIG. 10a

1000

```

[ . . . ]

nr-AI-ML-Error
...
[]
nr-On-Demand-DL-PRS-AI-ML-Configurations  NR-On-Demand-DL-PRS-AI-ML-Configurations
nr-On-Demand-DL-PRS-AI-ML-Configurations-Selected-IndexList  OPTIONAL, -- Need ON
nr-On-Demand-DL-PRS-AI-ML-Configurations-Selected-IndexList  OPTIONAL, -- Need ON
AI-ML-assistanceDataValidityArea  AI-ML-AreaID-CellList  OPTIONAL -- Need ON
[]
}

}

-- ASN1STOP

```

FIG. 10b

```
-- ASN1START
NR-AI-ML-LocationServerErrorCauses ::= SEQUENCE {
    cause      ENUMERATED {
        undefined,
        Direct-AI/ML-assistanceDataNotSupportedByServer,
        Direct-AI/ML-assistanceDataSupportedButCurrentlyNotAvailableByServer,
        Direct-AI/ML-notProvidedAssistanceDataNotSupportedByServer,
        Assisted-AI/ML-assistanceDataNotSupportedByServer,
        Assisted--AI/ML-assistanceDataSupportedButCurrentlyNotAvailableByServer,
        Assisted-AI/ML-notProvidedAssistanceDataNotSupportedByServer
        ...
        on-demand-AI/ML-dl-prs-NotSupportedByServer,
        on-demand-AI/ML-dl-prs-SupportedButCurrentlyNotAvailableByServer
    }
    AI-ML-model-NotSupportedByServer
    Training-AI-ML-model-NotValid
    Inference-AI-ML-model-NotValid
},
...
-- ASN1STOP
```

1100

FIG. 11

FIG. 11

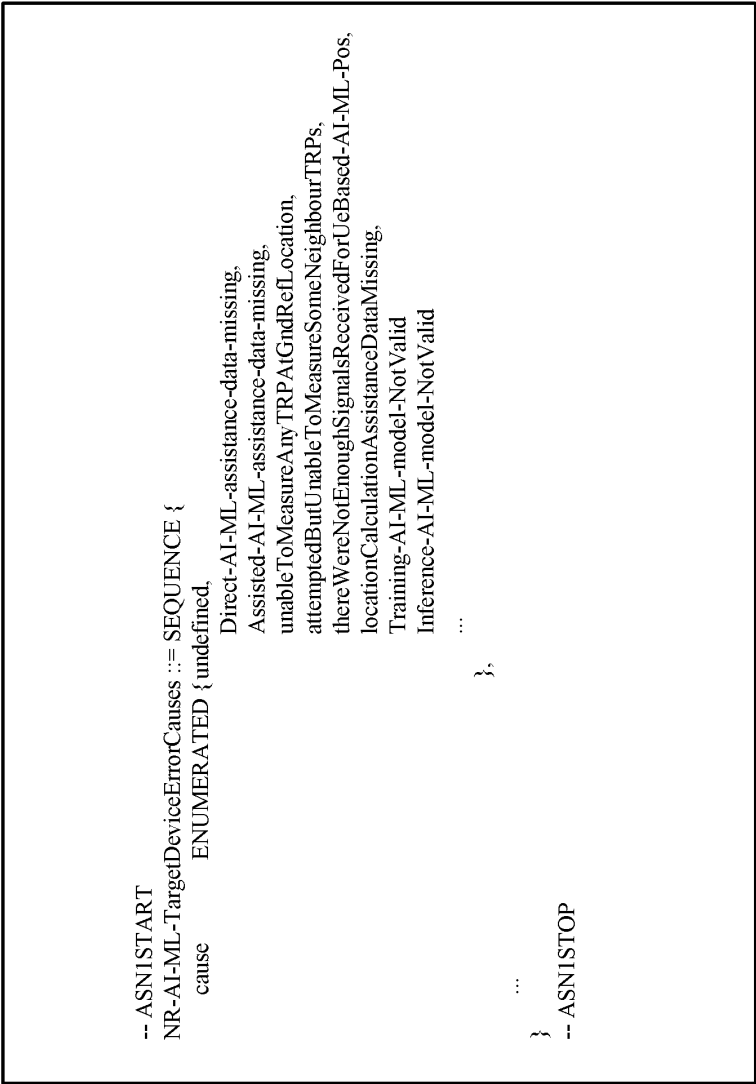


FIG. 12

FIG. 12

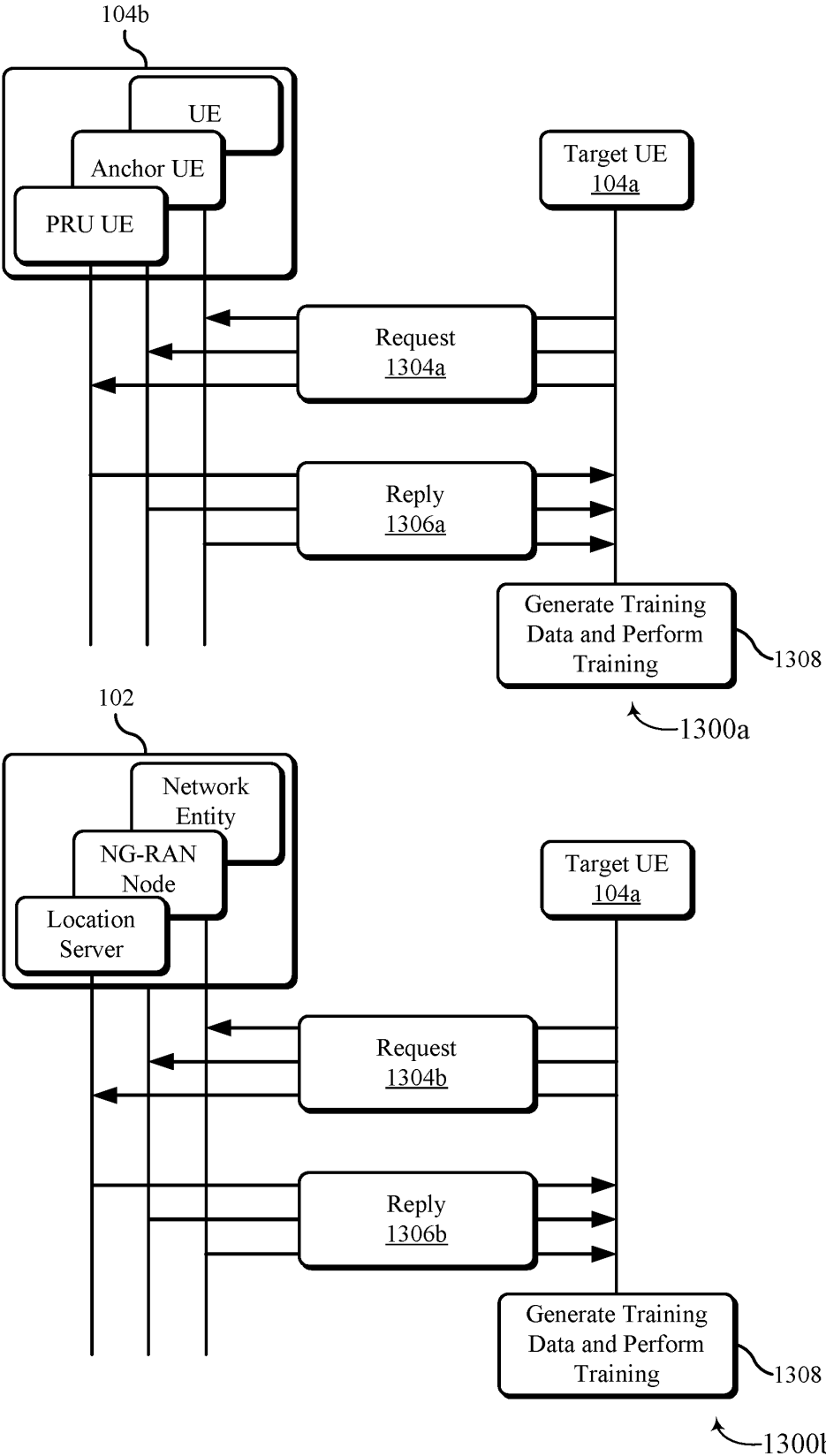


FIG. 13

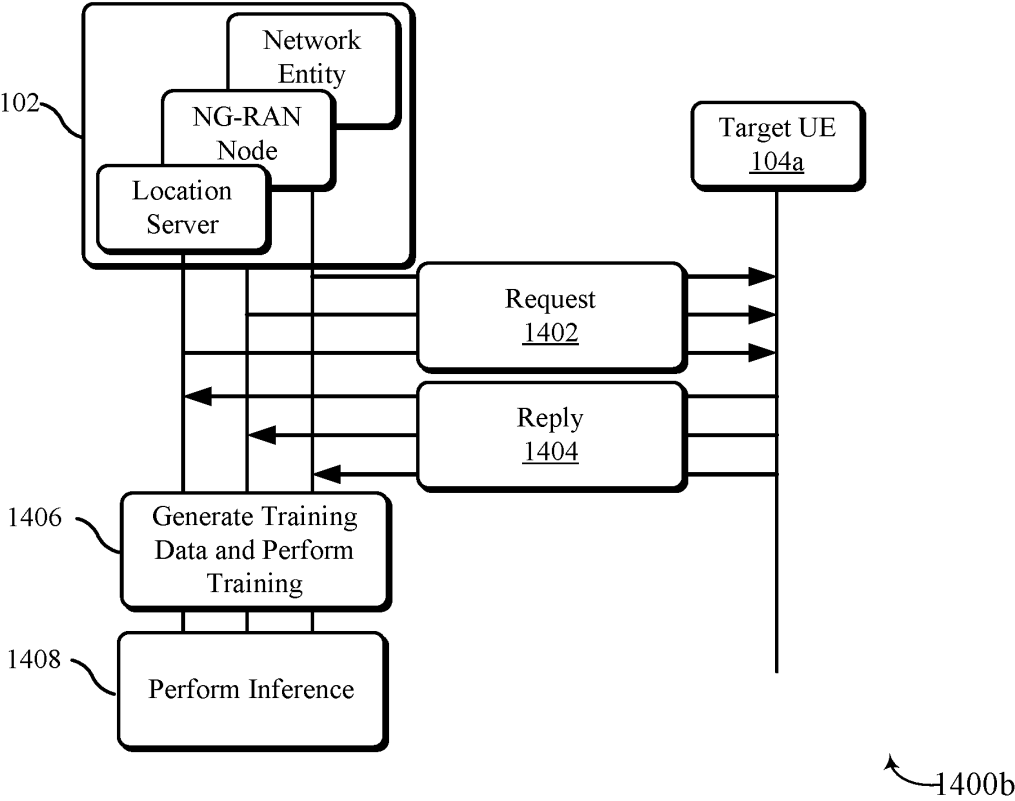
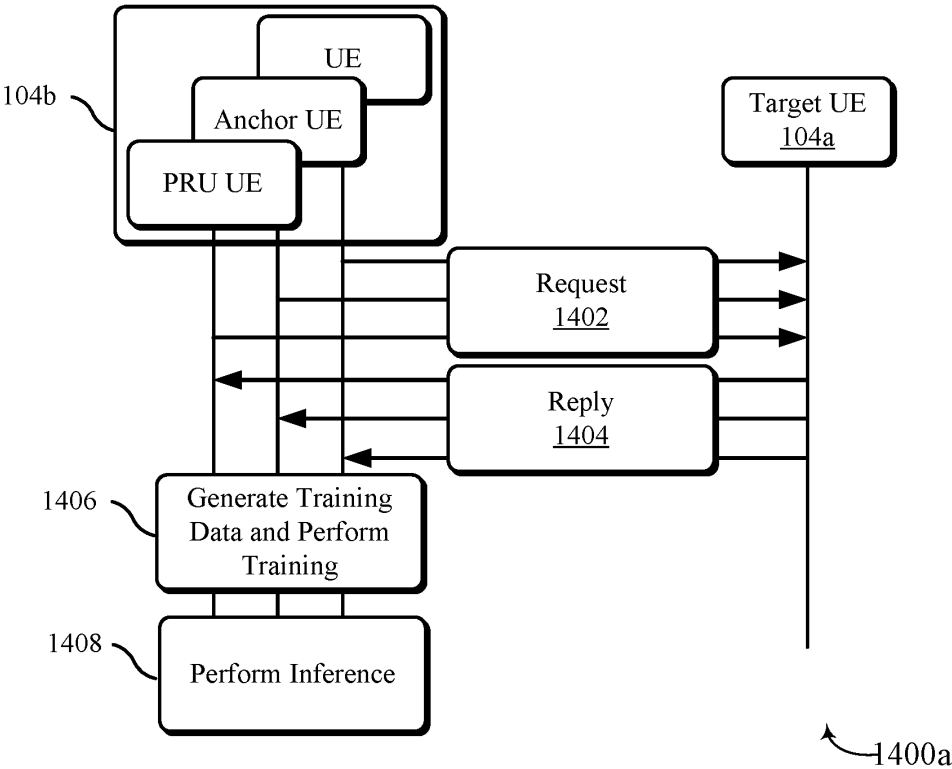


FIG. 14a

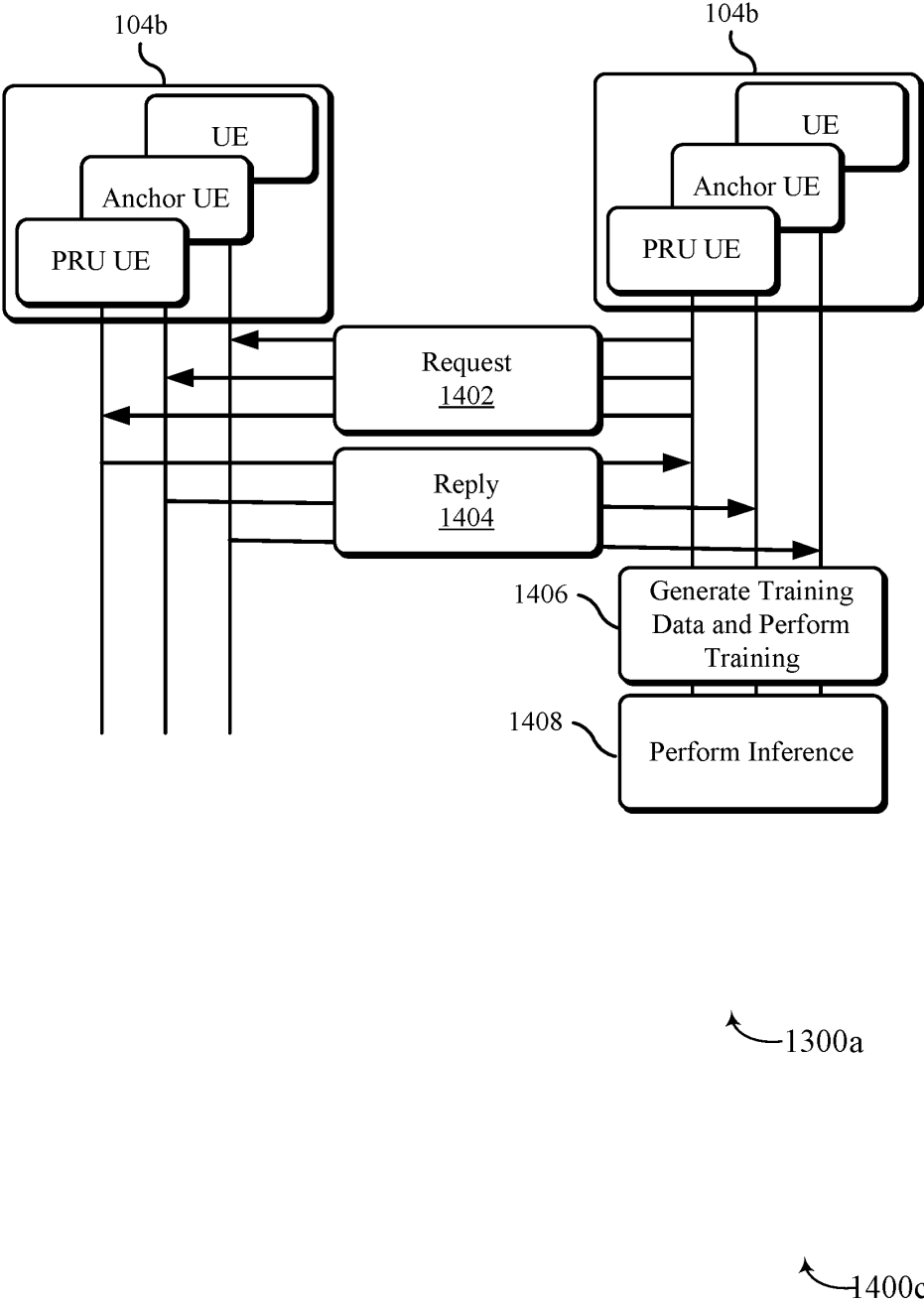


FIG. 14b

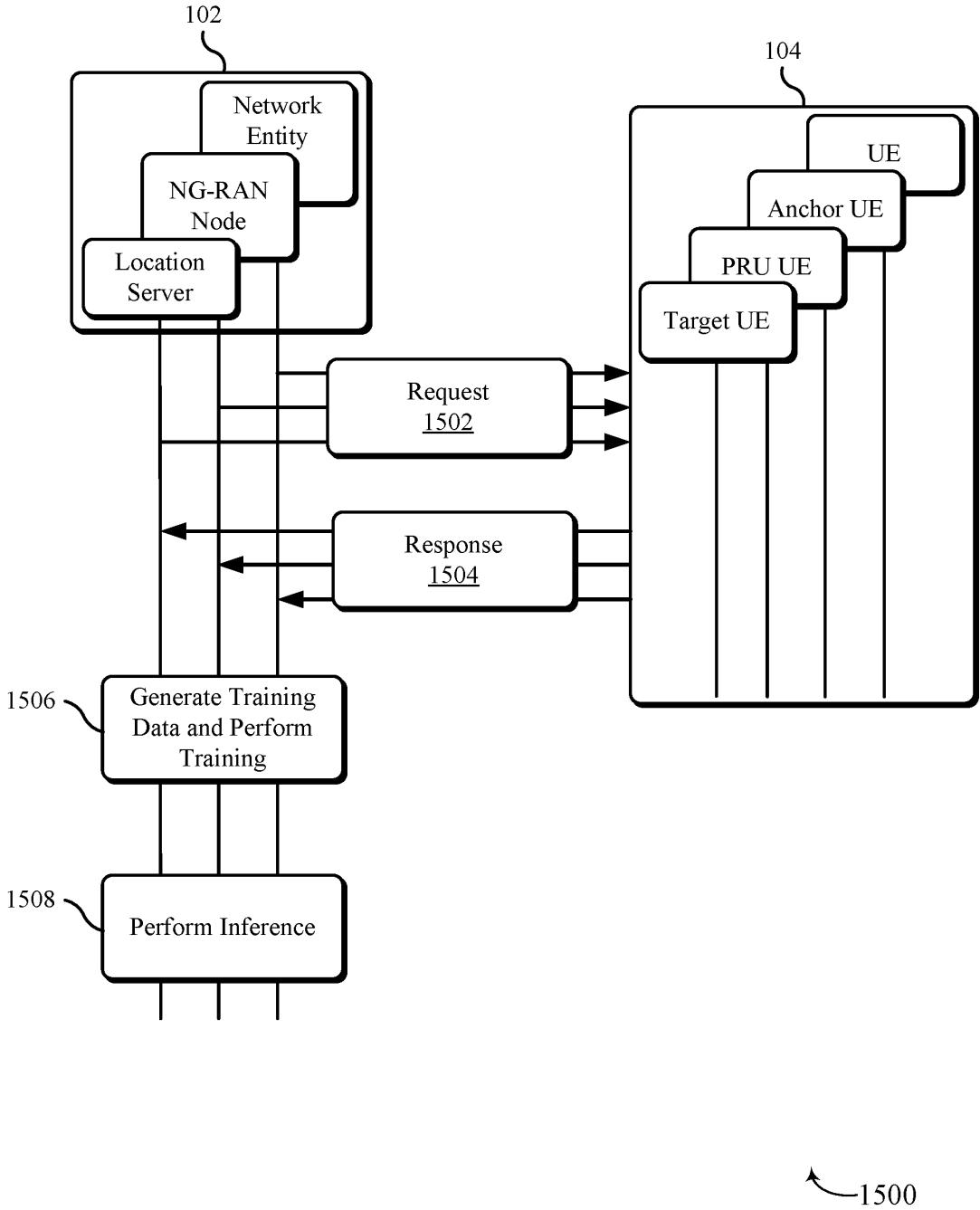


FIG. 15

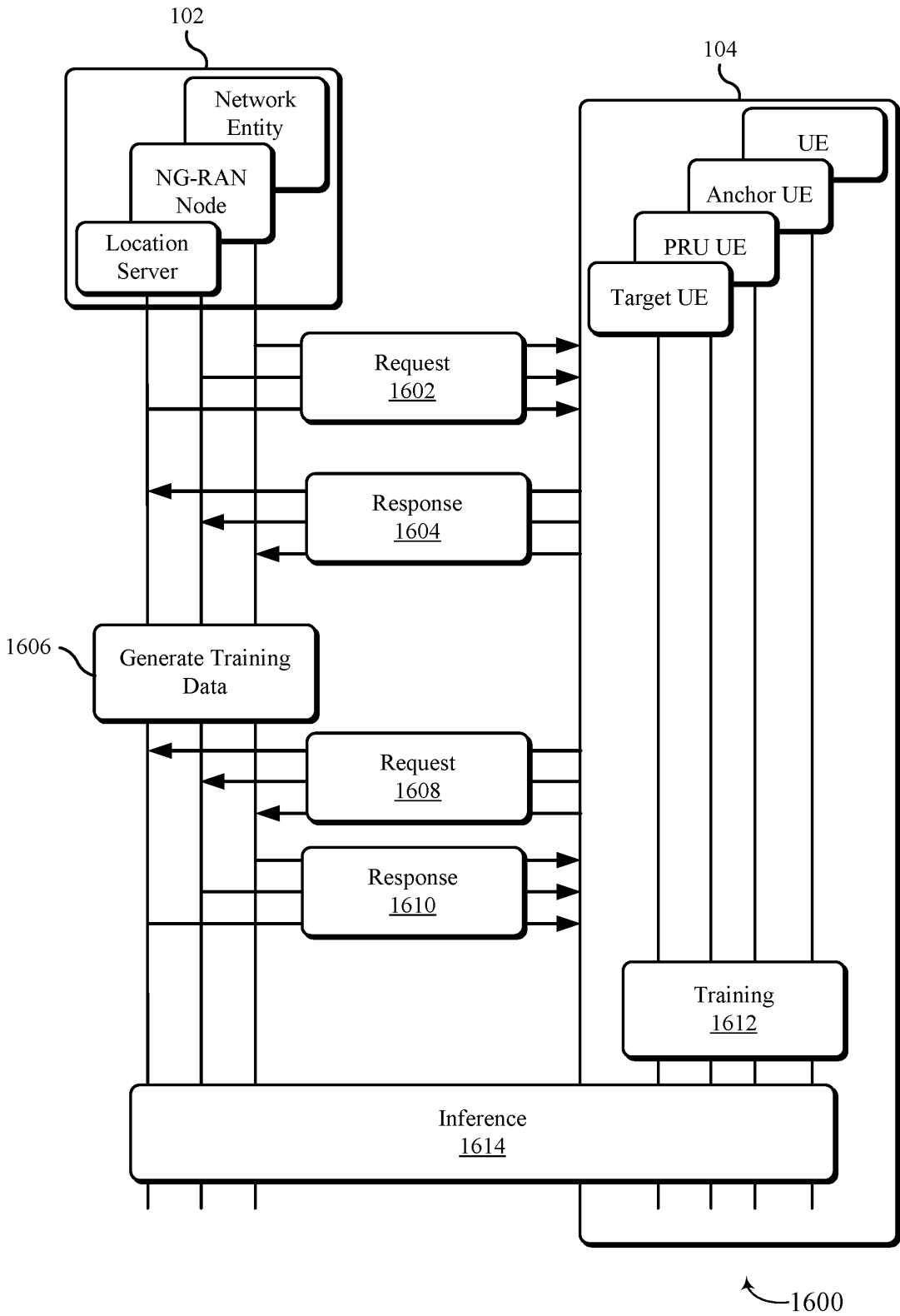


FIG. 16

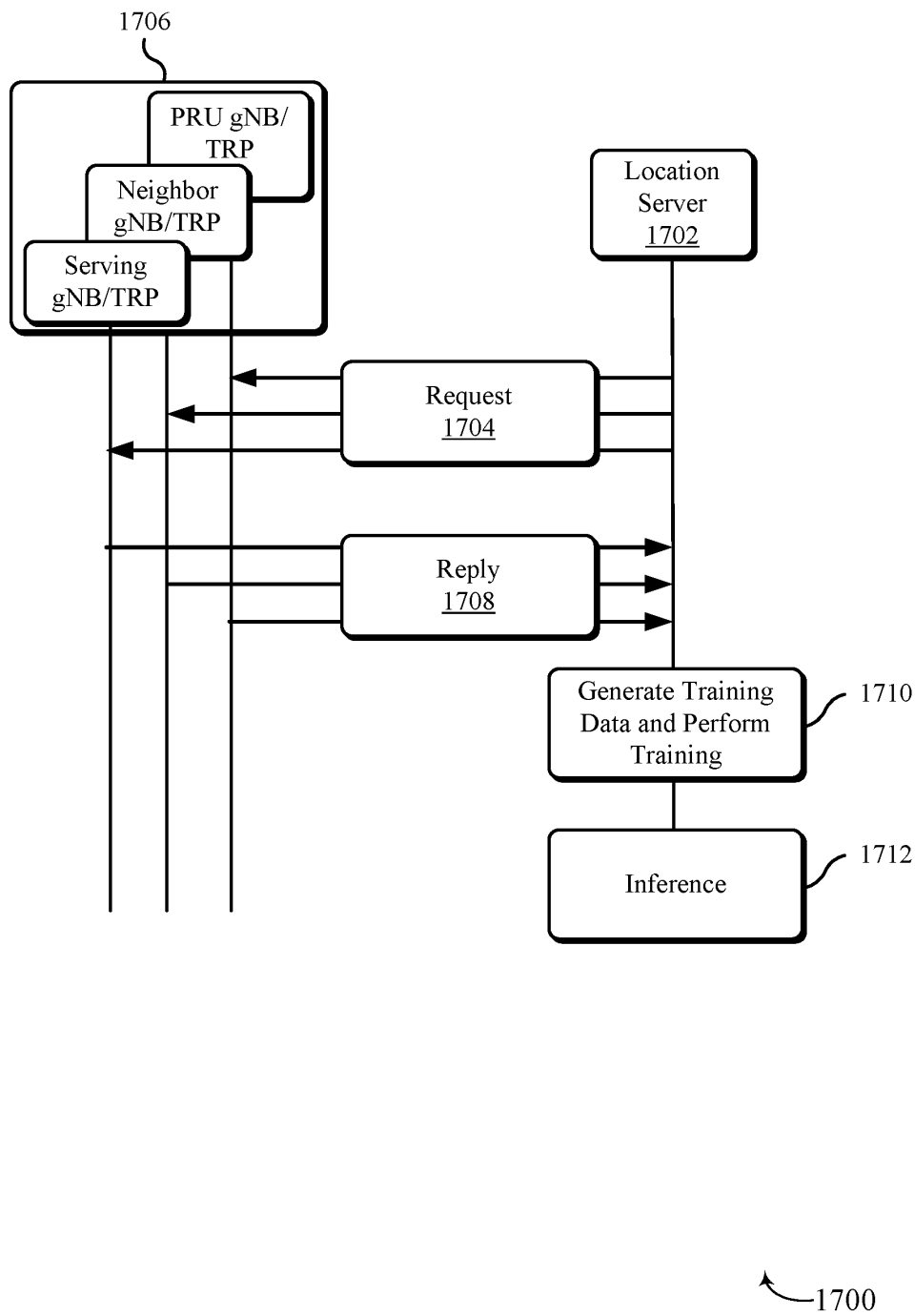


FIG. 17

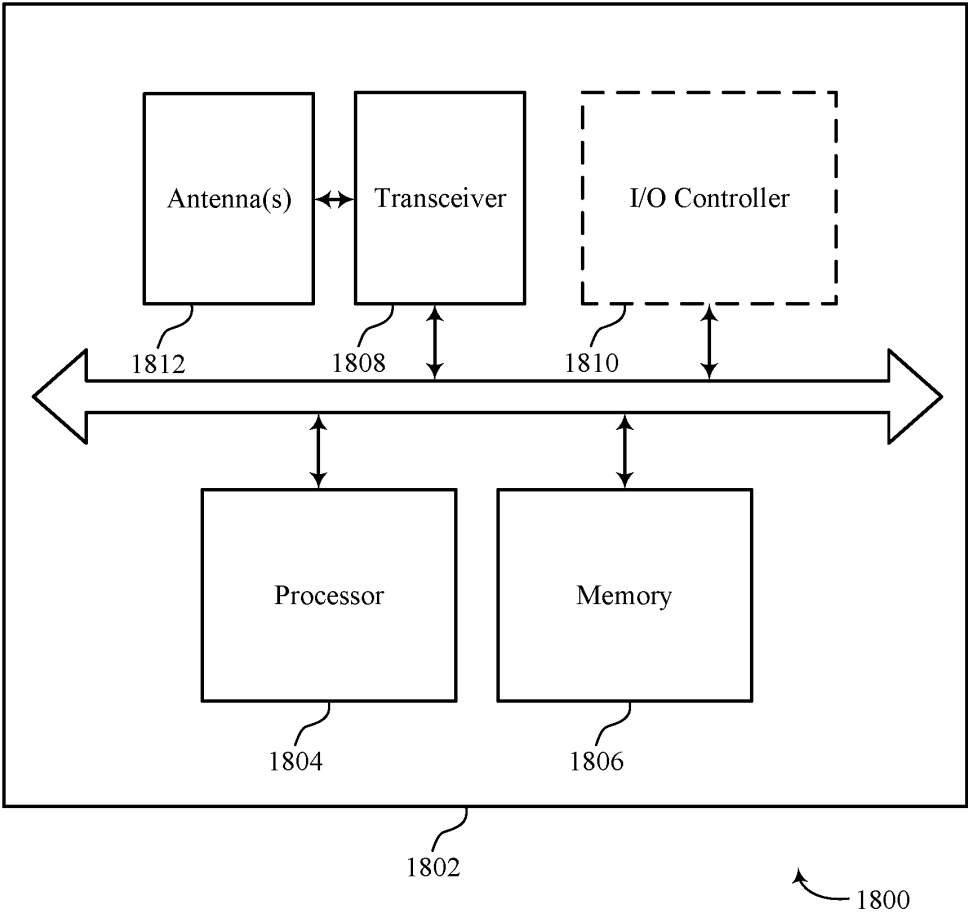


FIG. 18

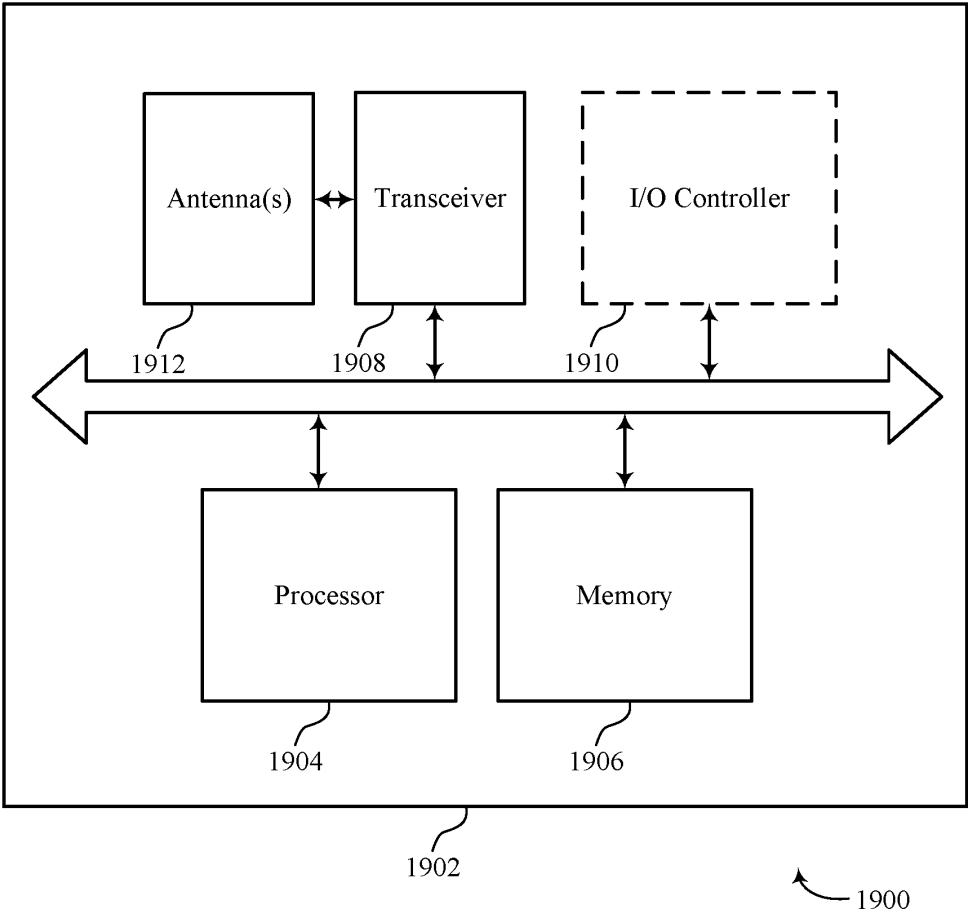


FIG. 19

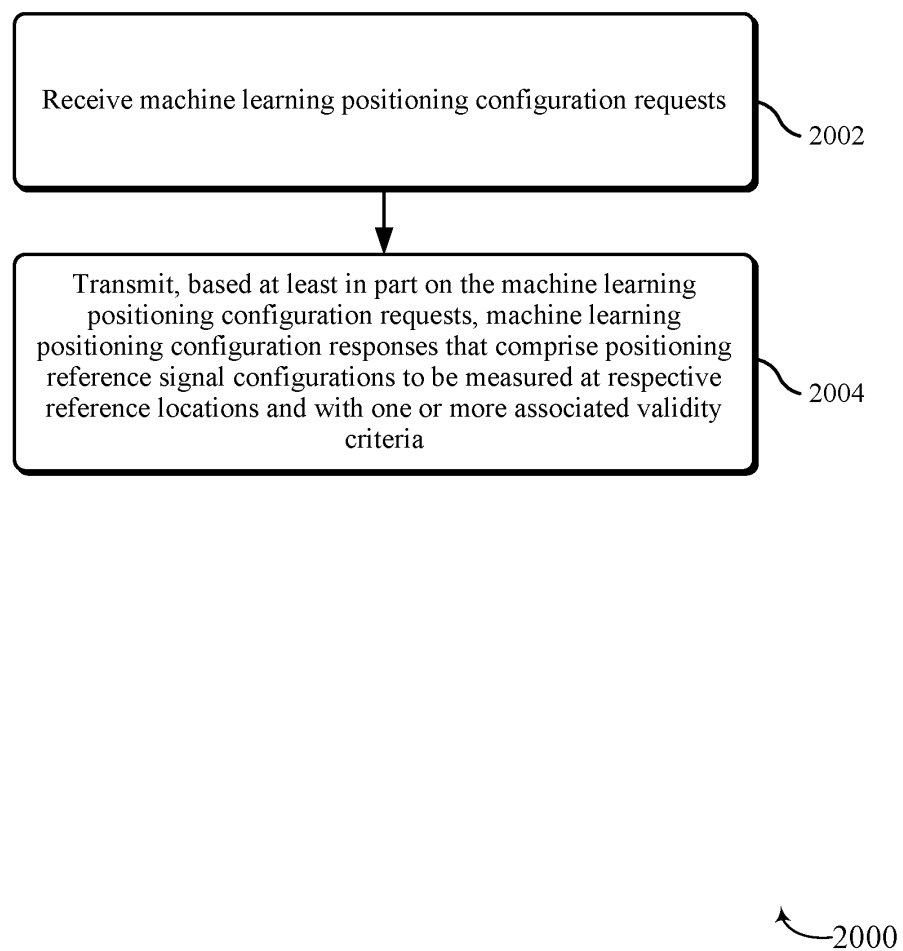


FIG. 20

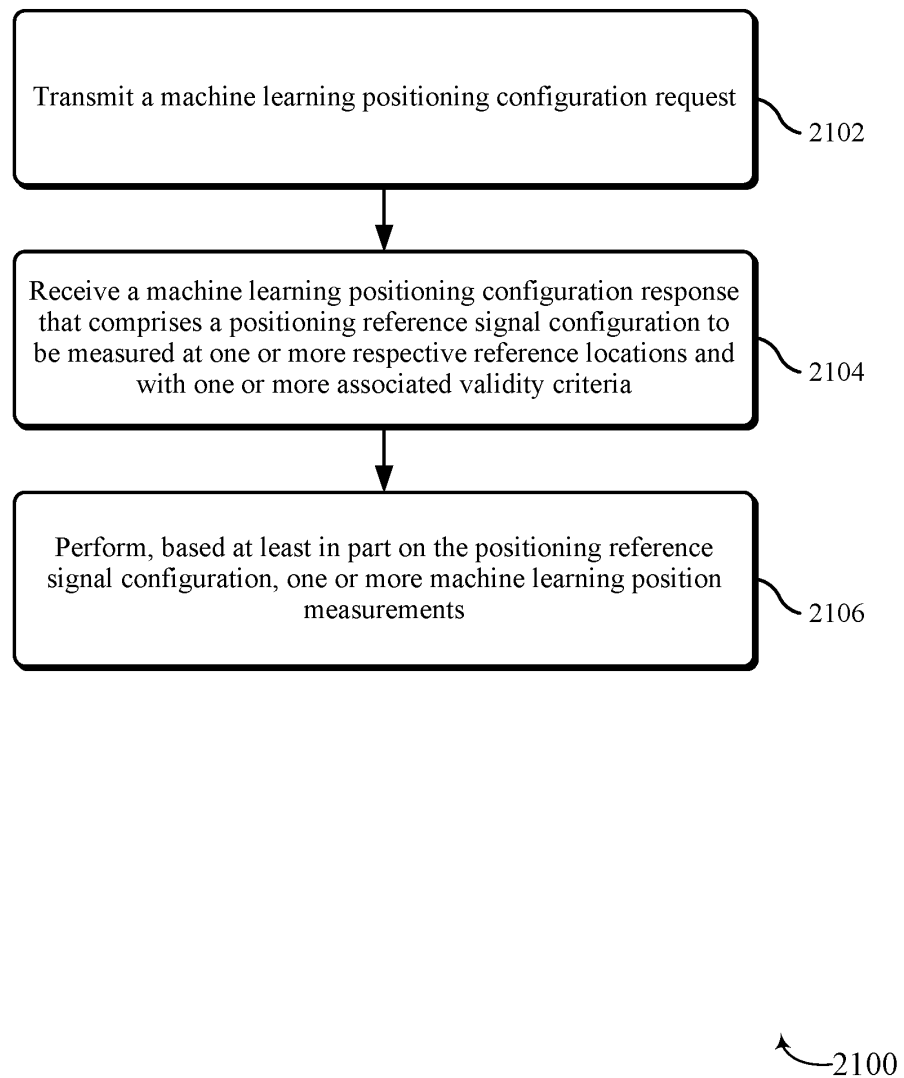


FIG. 21

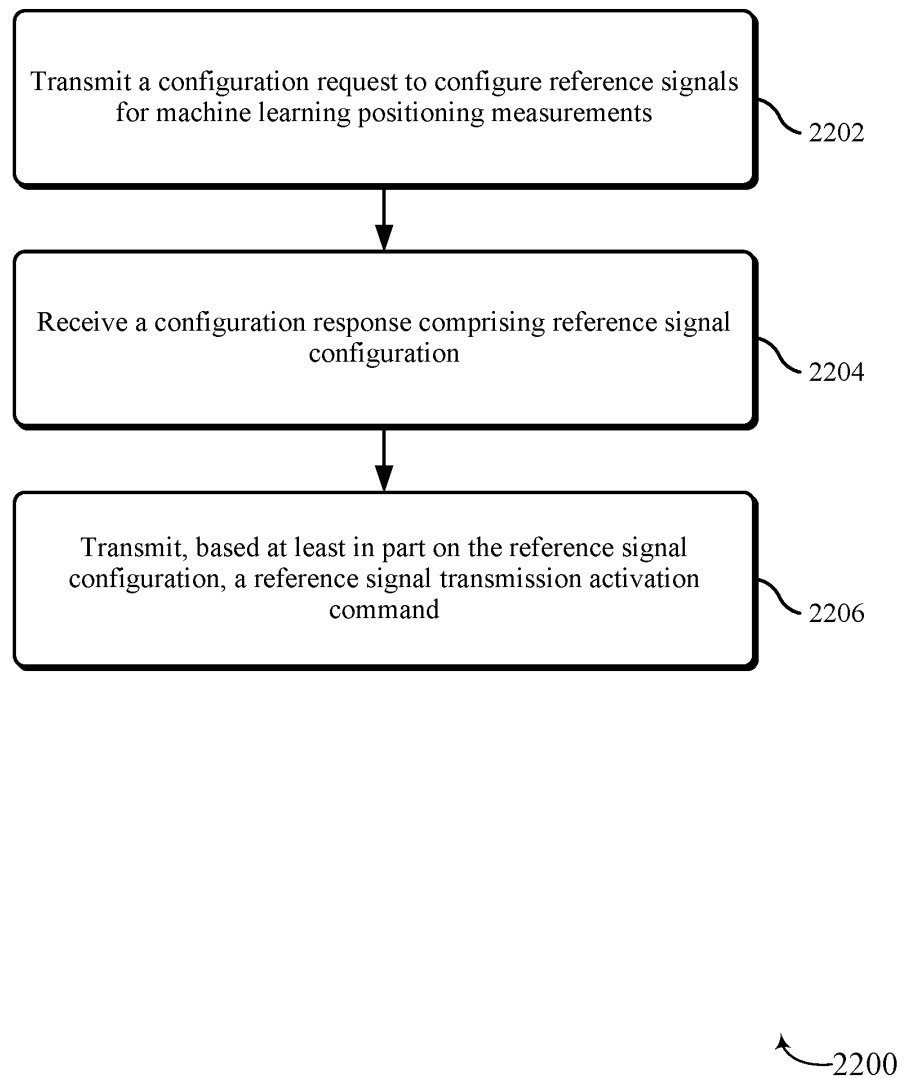


FIG. 22

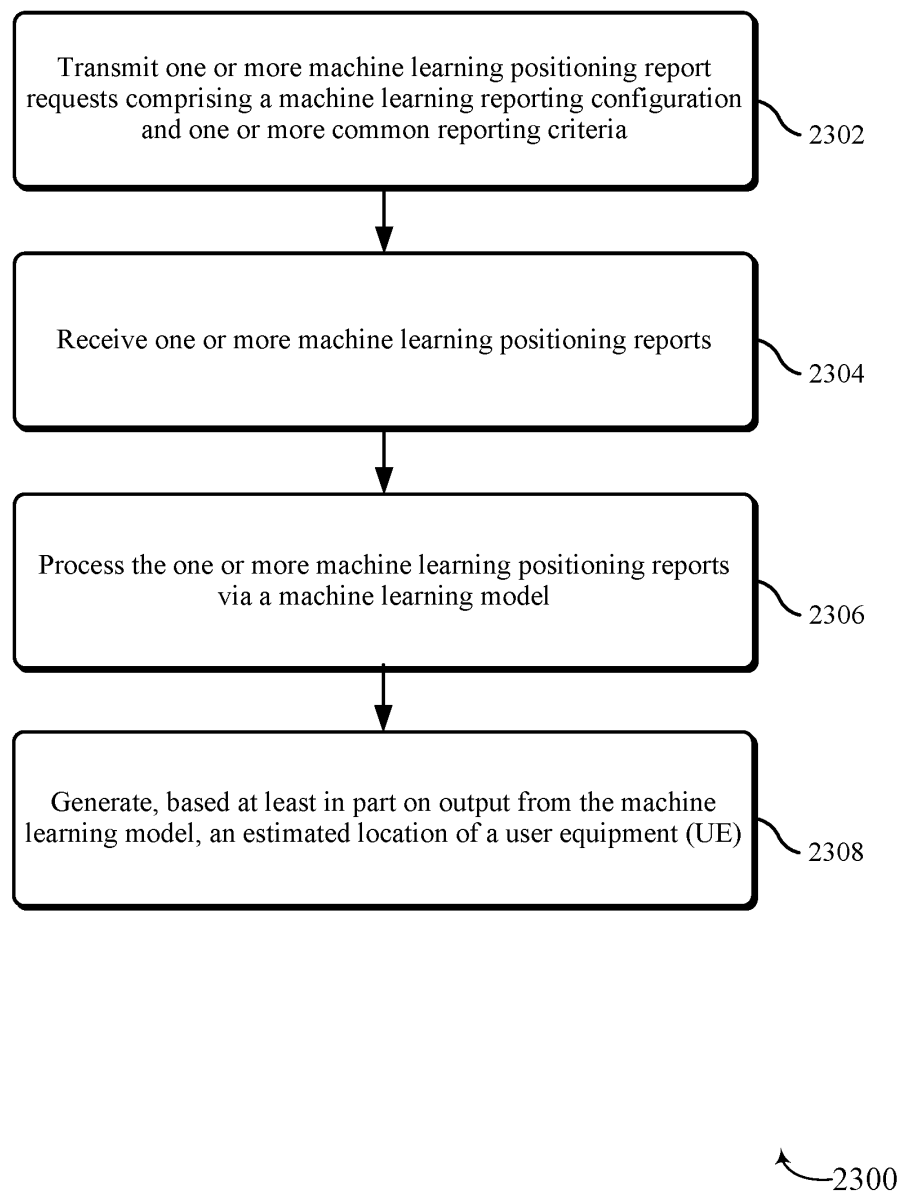


FIG. 23

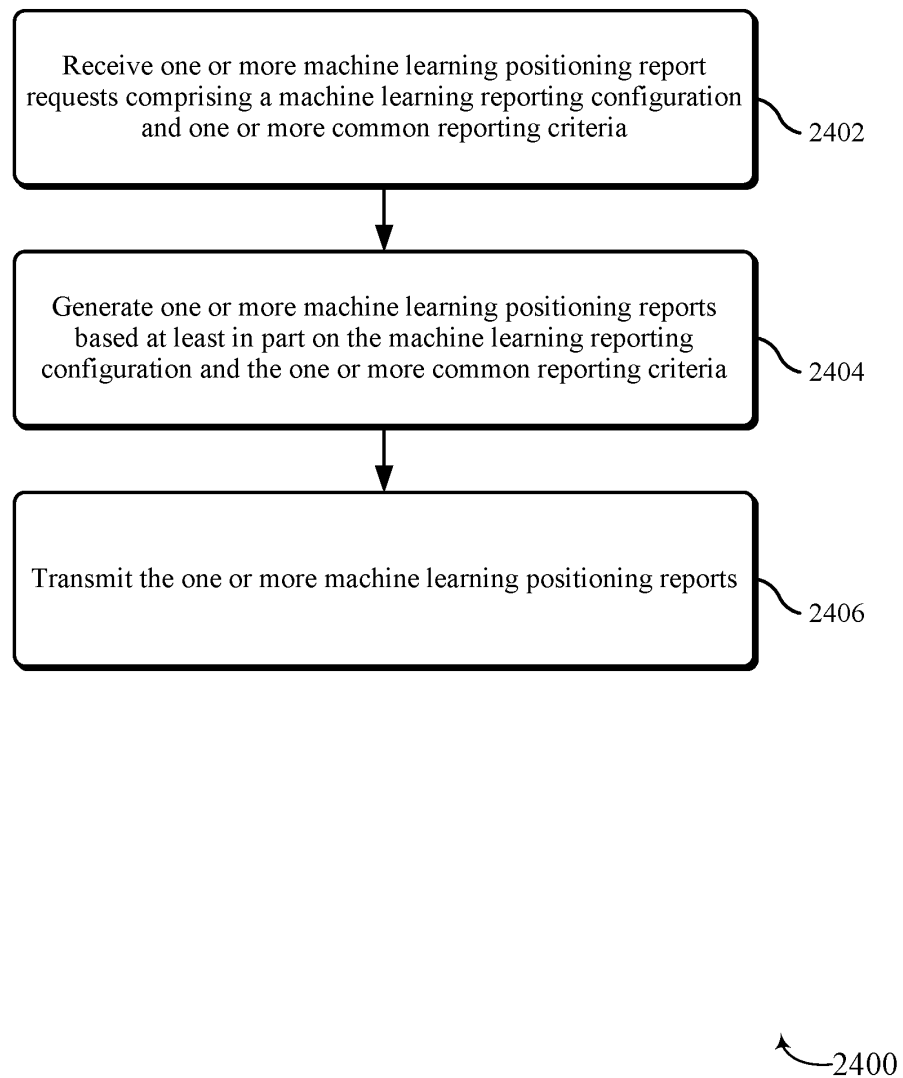


FIG. 24

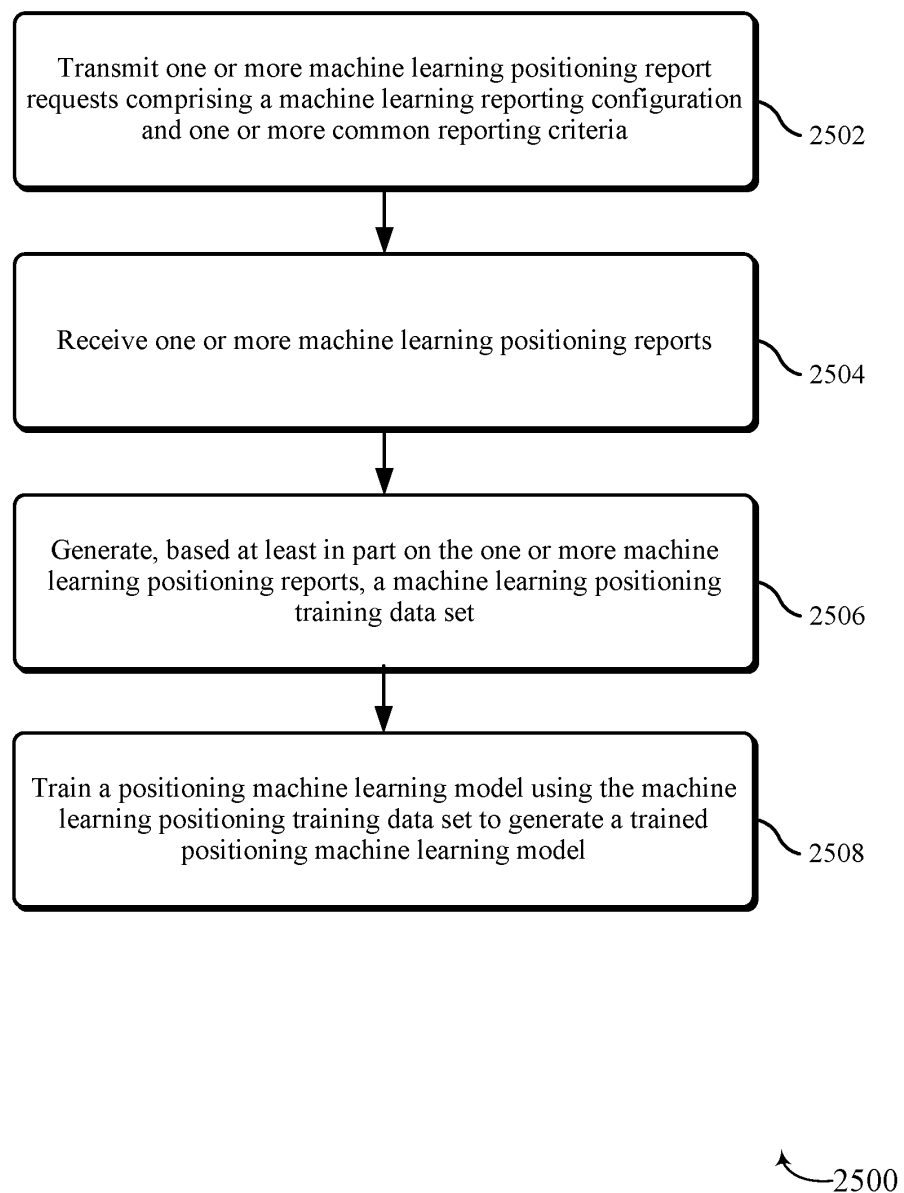


FIG. 25