–	*MeasObjectNR*

The IE *MeasObjectNR* specifies information applicable for SS/PBCH block(s) intra/inter-frequency measurements or CSI-RS intra/inter-frequency measurements.

MeasObjectNR information element

```
-- ASN1START
-- TAG-MEAS-OBJECT-NR-START

MeasObjectNR ::=                    SEQUENCE {
    ssbFrequency                    ARFCN-ValueNR                                   OPTIONAL,   -- Cond SSBorAssociatedSSB
    ssbSubcarrierSpacing                SubcarrierSpacing                           OPTIONAL,   -- Cond SSBorAssociatedSSB
    smtc1                           SSB-MTC                                         OPTIONAL,   -- Cond SSBorAssociatedSSB
    smtc2                           SSB-MTC2                                        OPTIONAL,   -- Cond IntraFreqConnected

    refFreqCSI-RS                   ARFCN-ValueNR                                   OPTIONAL,
    referenceSignalConfig           ReferenceSignalConfig,

    absThreshSS-BlocksConsolidation ThresholdNR                                     OPTIONAL,   -- Need R
    absThreshCSI-RS-Consolidation   ThresholdNR                                     OPTIONAL,   -- Need R

    nrofSS-BlocksToAverage          INTEGER (2..maxNrofSS-BlocksToAverage)          OPTIONAL,   -- Need R
    nrofCSI-RS-ResourcesToAverage   INTEGER (2..maxNrofCSI-RS-ResourcesToAverage)   OPTIONAL,   -- Need R

    quantityConfigIndex             INTEGER (1..maxNrofQuantityConfig),

    offsetMO                        Q-OffsetRangeList,

    cellsToRemoveList               PCI-List                                        OPTIONAL,   -- Need N
    cellsToAddModList               CellsToAddModList                               OPTIONAL,   -- Need N

    blackCellsToRemoveList          PCI-RangeIndexList                              OPTIONAL,   -- Need N
    blackCellsToAddModList          SEQUENCE (SIZE (1..maxNrofPCI-Ranges)) OF PCI-RangeElement   OPTIONAL,   -- Need N

    whiteCellsToRemoveList          PCI-RangeIndexList                              OPTIONAL,   -- Need N
    whiteCellsToAddModList          SEQUENCE (SIZE (1..maxNrofPCI-Ranges)) OF PCI-RangeElement   OPTIONAL,   -- Need N
    ...
}

ReferenceSignalConfig::=            SEQUENCE {
    ssb-ConfigMobility              SSB-ConfigMobility                              OPTIONAL,   -- Need M
    csi-rs-ResourceConfigMobility   SetupRelease { CSI-RS-ResourceConfigMobility }  OPTIONAL    -- Need M
}

SSB-ConfigMobility ::=              SEQUENCE {
    ssb-ToMeasure                   SetupRelease { SSB-ToMeasure }                  OPTIONAL,   -- Need M
    useServingCellTimingForSync     BOOLEAN,
    ss-RSSI-Measurement                 SS-RSSI-Measurement                         OPTIONAL,   -- Need M
    ...
}

Q-OffsetRangeList ::=               SEQUENCE {
    rsrpOffsetSSB                   Q-OffsetRange           DEFAULT dB0,
    rsrqOffsetSSB                   Q-OffsetRange           DEFAULT dB0,
    sinrOffsetSSB                   Q-OffsetRange           DEFAULT dB0,
    rsrpOffsetCSI-RS                Q-OffsetRange           DEFAULT dB0,
    rsrqOffsetCSI-RS                Q-OffsetRange           DEFAULT dB0,
    sinrOffsetCSI-RS                Q-OffsetRange           DEFAULT dB0
}

SSB-ToMeasure ::=                   CHOICE {
    shortBitmap                     BIT STRING (SIZE (4)),
    mediumBitmap                    BIT STRING (SIZE (8)),
    longBitmap                      BIT STRING (SIZE (64))
}

ThresholdNR ::=                     SEQUENCE{
    thresholdRSRP                   RSRP-Range              OPTIONAL,
    thresholdRSRQ                   RSRQ-Range              OPTIONAL,
    thresholdSINR                   SINR-Range              OPTIONAL
}

CellsToAddModList ::=               SEQUENCE (SIZE (1..maxNrofCellMeas)) OF CellsToAddMod

CellsToAddMod ::=                   SEQUENCE {
    physCellId                      PhysCellId,

    cellIndividualOffset            Q-OffsetRangeList
}

-- TAG-MEAS-OBJECT-NR-STOP
-- ASN1STOP
```

MeasObjectNR field descriptions
absThreshCSI-RS-Consolidation
Absolute threshold for the consolidation of measurement results per CSI-RS resource(s) from L1 filter(s). The values above the threshold are used as input to the derivation of cell measurement results as described in 5.5.3.3 and the L3 filter(s) per CSI-RS resource as described in 5.5.3.2.
absThreshSS-BlocksConsolidation
Absolute threshold for the consolidation of measurement results per SS/PBCH block(s) from L1 filter(s). The values above the threshold are used as input to the derivation of cell measurement results as described in 5.5.3.3and the L3 filter(s) per SS/PBCH block index as described in 5.5.3.2.
blackCellsToAddModList
List of cells to add/modify in the black list of cells.
blackCellsToRemoveList
List of cells to remove from the black list of cells.
cellsToAddModList
List of cells to add/modify in the cell list.
cellsToRemoveList
List of cells to remove from the cell list.
nrofCSInrofCSI-RS-ResourcesToAverage
Indicates the maximum number of measurement results per beam based on CSI-RS resources to be averaged. The same value applies for each detected cell associated with this MeasObjectNR.
nrofSS-BlocksToAverage
Indicates the maximum number of measurement results per beam based on SS/PBCH blocks to be averaged. The same value applies for each detected cell associated with this MeasObject.
offsetMO
Offset values applicable to all measured cells with reference signal(s) indicated in this *MeasObjectNR*.
quantityConfigIndex
Indicates the n-*th* element of *quantityConfigNR-List* provided in *MeasConfig*.
referenceSignalConfig
RS configuration (e.g. SMTC window, CSI-RS resource, etc.)
refFreqCSI-RS
Point A which is used for maping of CSI-RS to physical resources according to TS 38.211 section 7.4.1.5.3.
smtc1
Primary measurement timing configuration. Applicable for intra- and inter-frequency measurements.
smtc2
Secondary measurement timing confguration for SS corresponding to this MeasObjectNR with PCI listed in pci-List. For these SS, the periodicity is indicated by periodicity in smtc2 and the timing offset is equal to the offset indicated in periodicityAndOffset modulo periodicity. periodicity in smtc2 can only be set to a value stricty shorter than the periodicity indicated by periodicityAndOffset in smtc1 (e.g. if periodicityAndOffset indicates sf10, periodicity can only be set of sf5, if periodicityAndOffset indicates sf5, smtc2 cannot be configured).
ssbFrequency
Indicates the frequency of the SS associated to this MeasObjectNR.
ssbSubcarrierSpacing
Subcarrier spacing of SSB. Only the values 15 or 30 (<6GHz), 120 kHz or 240 kHz (>6GHz) are applicable.
whiteCellsToAddModList
List of cells to add/modify in the white list of cells.
whiteCellsToRemoveList
List of cells to remove from the white list of cells.

–　　　　　　　　*MeasResults*

The IE *MeasResults* covers measured results for intra-frequency, inter-frequency, and inter-RAT mobility.

MeasResults information element

```
-- ASN1START
-- TAG-MEAS-RESULTS-START

MeasResults ::=                         SEQUENCE {
    measId                                  MeasId,
    measResultServingMOList                 MeasResultServMOList,
    measResultNeighCells                        CHOICE {
        measResultListNR                            MeasResultListNR,
        ...
    }                                                                                           OPTIONAL,
    ...
}
```

```
MeasResultServMOList ::=                 SEQUENCE (SIZE (1..maxNrofServingCells)) OF MeasResultServMO

MeasResultServMO ::=                     SEQUENCE {
    servCellId                              ServCellIndex,
    measResultServingCell                   MeasResultNR,
    measResultBestNeighCell                 MeasResultNR                                    OPTIONAL,
    ...
}

MeasResultListNR ::=                     SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR

MeasResultNR ::=                         SEQUENCE {
    physCellId                              PhysCellId                                      OPTIONAL,
    --FFS: Details of cgi info
    measResult                                  SEQUENCE {
        cellResults                                 SEQUENCE{
            resultsSSB-Cell                             MeasQuantityResults                 OPTIONAL,
            resultsCSI-RS-Cell                          MeasQuantityResults                 OPTIONAL
        },
        rsIndexResults                              SEQUENCE{
            resultsSSB-Indexes                          ResultsPerSSB-IndexList             OPTIONAL,
            resultsCSI-RS-Indexes                       ResultsPerCSI-RS-IndexList          OPTIONAL
        }                                                                                   OPTIONAL
    },
    ...
}


MeasQuantityResults ::=         SEQUENCE {
    rsrp                            RSRP-Range                              OPTIONAL,
    rsrq                            RSRQ-Range                              OPTIONAL,
    sinr                            SINR-Range                              OPTIONAL
}

ResultsPerSSB-IndexList::=              SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index
```

```
ResultsPerSSB-Index ::=                     SEQUENCE {
    ssb-Index                                   SSB-Index,
    ssb-Results                                 MeasQuantityResults                 OPTIONAL
}

ResultsPerCSI-RS-IndexList::=           SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index

ResultsPerCSI-RS-Index ::=                  SEQUENCE {
    csi-RS-Index                                CSI-RS-Index,
    csi-RS-Results                              MeasQuantityResults                 OPTIONAL
}

-- TAG-MEAS-RESULTS-STOP
-- ASN1STOP
```