

# ISO/IEC 29145-3:2014-03 (E)

## Information technology - Wireless Beacon-enabled Energy Efficient Mesh network (WiBEEM) for wireless home network services - Part 3: NWK Layer

---

Contents	Page
FOREWORD.....	4
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms, definitions and abbreviations .....	6
3.1 Terms and definitions.....	6
3.2 Abbreviations.....	7
3.3 Conventions.....	8
4 Conformance.....	8
5 Overview of the WiBEEM technology.....	8
6 NWK layer specifications .....	8
6.1 General.....	8
6.2 NWK layer service specifications .....	8
6.2.1 Overview .....	8
6.2.2 NWK data service.....	9
6.2.3 NWK management service.....	12
6.2.4 Network formation .....	14
6.2.5 Allowing devices to join .....	16
6.2.6 Begin as a router .....	18
6.2.7 Joining a network.....	19
6.2.8 Joining a device directly to a network .....	22
6.2.9 Leaving a network .....	24
6.2.10 Resetting a device.....	26
6.2.11 Receiver synchronisation.....	27
6.2.12 Information base maintenance .....	30
Bibliography.....	34
Figure 1 – NWK layer structure .....	9
Figure 2 – Message sequence chart for resetting the network layer .....	27
Figure 3 – Message sequence chart for synchronising in a non-beaconing network .....	30
Table 1 – NLDE-DATA.request parameters.....	10
Table 2 – NLDE-DATA.confirm parameters .....	11
Table 3 – NLDE-DATA.indication parameters.....	12
Table 4 – Summary of primitives used by NWK layer .....	12
Table 5 – NLME-NETWORK-DISCOVERY.request parameters .....	13
Table 6 – NLME-WiBEEM-DISCOVERY.confirm paramters .....	14
Table 7 – Network descriptor information fields.....	14
Table 8 – NLME-WRC-OPERATING.request parameters .....	15
Table 9 – NLME-NETWORK-FORMATION.confirm parameters .....	16
Table 10 – NLME-ALLOW-JOINING.request .....	17
Table 11 – NLME-ALLOW-JOINING.confirm parameters.....	17

Table 12 – NLME-SET-SUPERFRAME.request parameters .....	18
Table 13 – NLME-SET-SUPERFRAME.confirm parameters .....	19
Table 14 – NLME-JOIN.request parameters .....	20
Table 15 – NLME-JOIN.indication parameters .....	21
Table 16 – NLME-JOIN.confirm parameters .....	22
Table 17 – NLME-DETERMINED-JOIN.request parameters .....	22
Table 18 – Capability information parameter format .....	23
Table 19 – NLME-DETERMINED-JOIN.confirm parameters .....	23
Table 20 – NLME-LEAVE.request parameters .....	24
Table 21 – NLME-LEAVE.indication parameters .....	25
Table 22 – NLME-LEAVE.confirm parameters .....	25
Table 23 – NLME-RESET.confirm parameters .....	27
Table 24 – NLME-SYNC.request parameters .....	28
Table 25 – NLME-SYNC.confirm parameters .....	29
Table 26 – NLME-READ-NIB.request parameters .....	30
Table 27 – NLME-READ-NIB.confirm parameters .....	31
Table 28 – NLME-WRITE-NIB.request parameters .....	32
Table 29 – NLME-WRITE-NIB.confirm parameters .....	33