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| Purpose | System Description Document |
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IEEE 802.16t

System Description Document

November 2020

# Introduction

This document describes the technical approach for IEEE 802.16 operation in channels less than 1.25 MHz bandwidth.

PAR Scope (From [802.15-20-0196r1](https://mentor.ieee.org/802.15/dcn/20/15-20-0196-01-016t-licensed-narrowband-amendment-par.pdf)):

*This project specifies operation in licensed spectrum with channel bandwidths greater than or equal to 5 kHz and less than 100 kHz. The project will specify a new PHY, and changes to the MAC as necessary to support the PHY. The amendment is frequency independent but focuses on spectrum less than 2 GHz. The range and data rate supported by the narrower channels are commensurate with those of the base standard, as scaled by the reduced channel bandwidth. The project also amends IEEE Std 802.16 as required to support aggregated operation in adjacent and non-adjacent channels.*

# Informative Section – rationale for changes:

## System-level PHY Design Aspects

### Performance Analysis (derived from SRD:)

# PHY Description

# MAC Changes related to overhead reduction

## MAC Layer Modifications for efficiency (From 16-16-0059r0)

### Modified DL MAP IE structure

### Modified UL MAP IE structure

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### MAC Management Message (MMM) Structure