



Equipment Authorization Guidance for Hearing Aid Compatibility

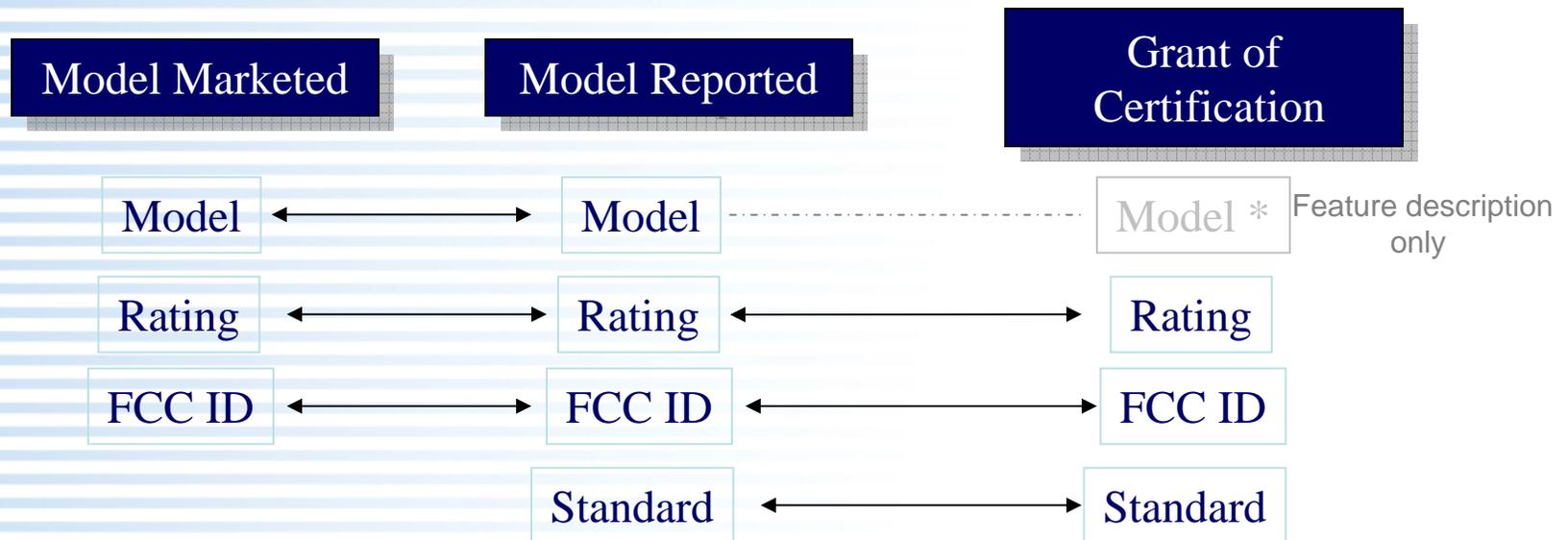
Jim Szeliga

TCB Workshop Oct. 08



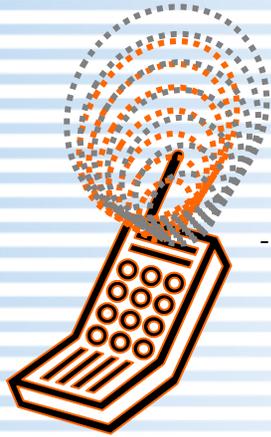
Introduction

- 47 CFR 20.19 of the rules
- Manufacturers of wireless handsets must submit, as part of the equipment certification process
 - HAC report exhibits - supporting the HAC rating of the models marketed.
 - Tested according to the ANSI C63.19 standard





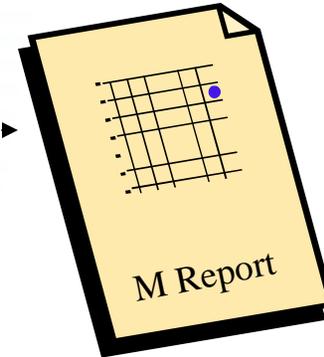
A HAC Test Report Exhibits Must Contain



#M Rated Models

Initial Application

EAS



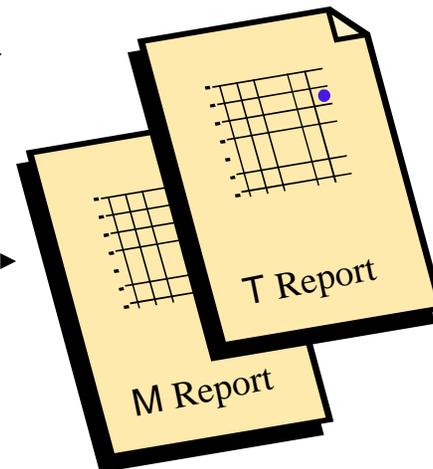
one

or

C2PC Application



#M#T Rated Models

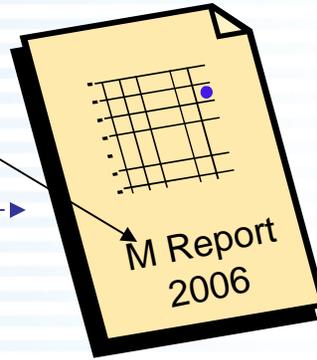


two

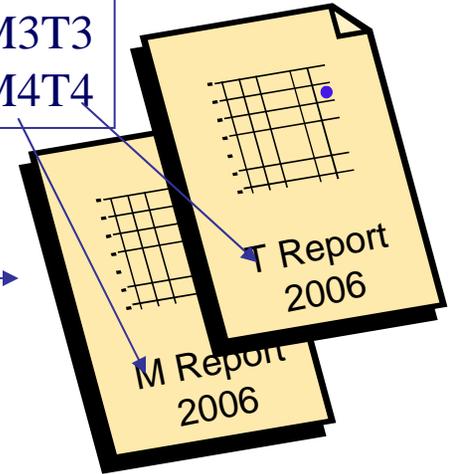


C63.19-2006
Until January 1, 2010

M3
M4

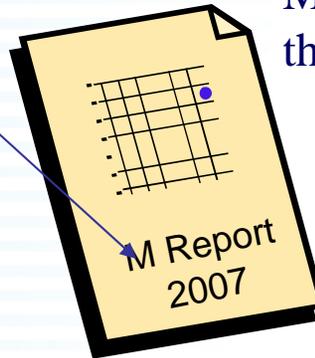


M3T3
M4T4



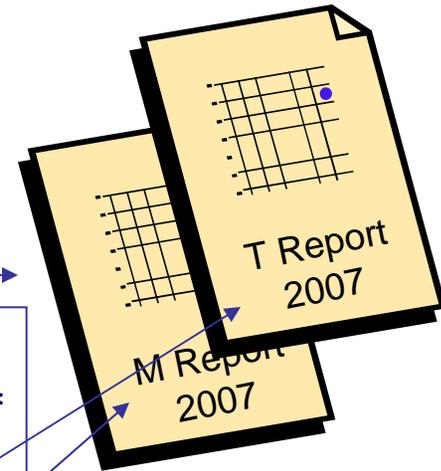
C63.19-2007

M3
M4



M and T rating must be based on the same ANSI C63.19 version.

M3T3
M3T4*
M4T4
M4T3*



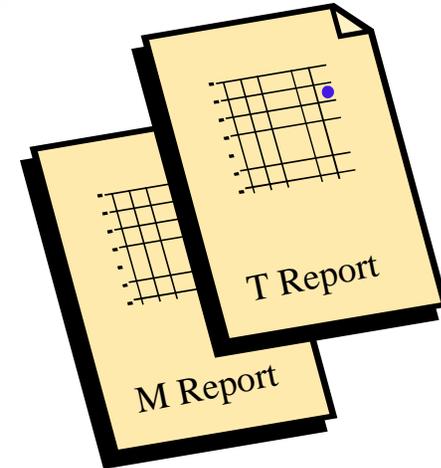
* Only applicable for 2007



A HAC compliance report can only be submitted for bands, air interfaces are defined in the C63.19-2006/2007 standard



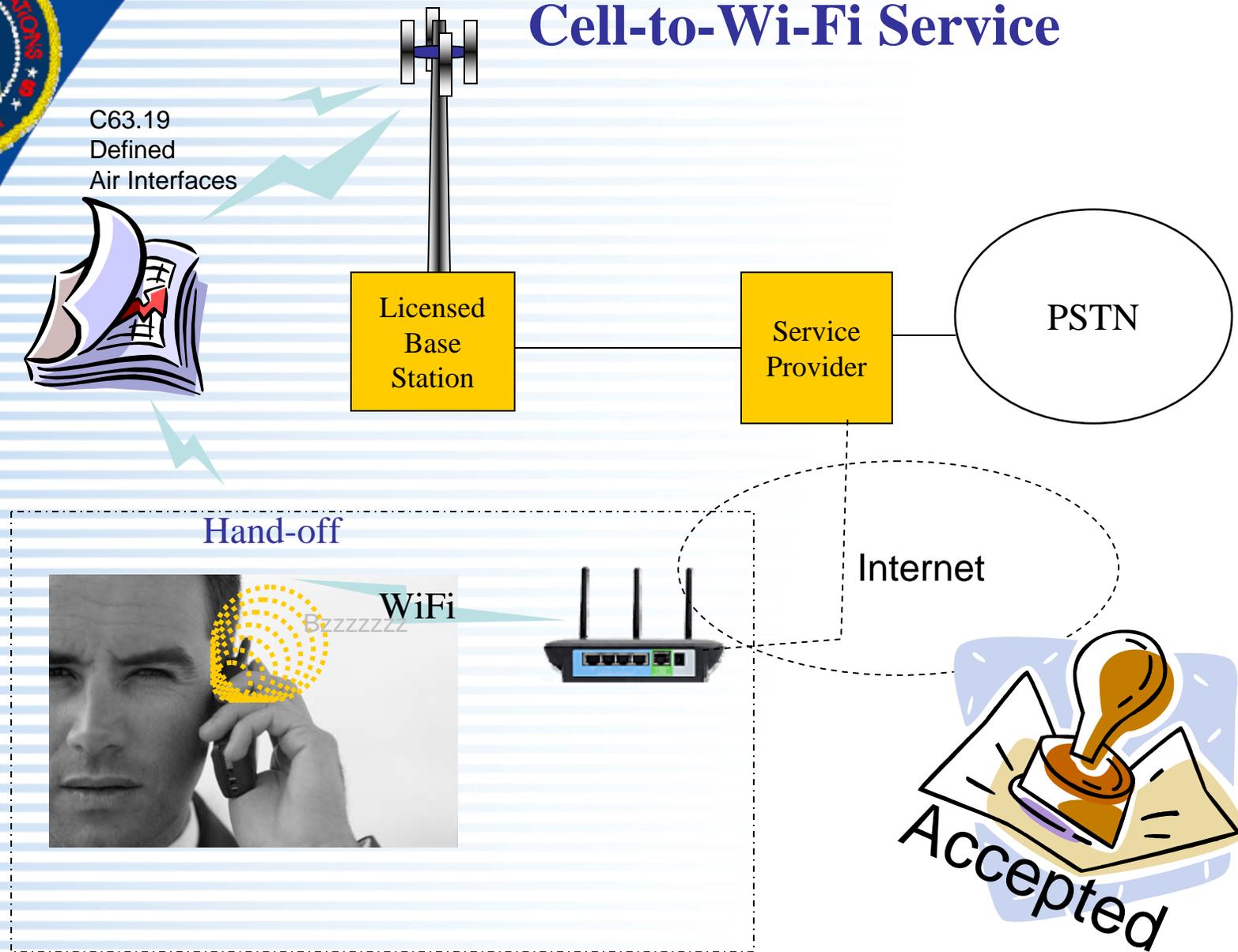
CDMA	TIA/EIA/IS-2000
UMTS (WCDMA)	T1/T1P1/3GPP
GSM	J-STD-007
iDen TDMA	
TDMA	TIA/EIA-136



HAC test data for air interfaces and bands not defined in ANSI C63.19-2007 will not be accepted.

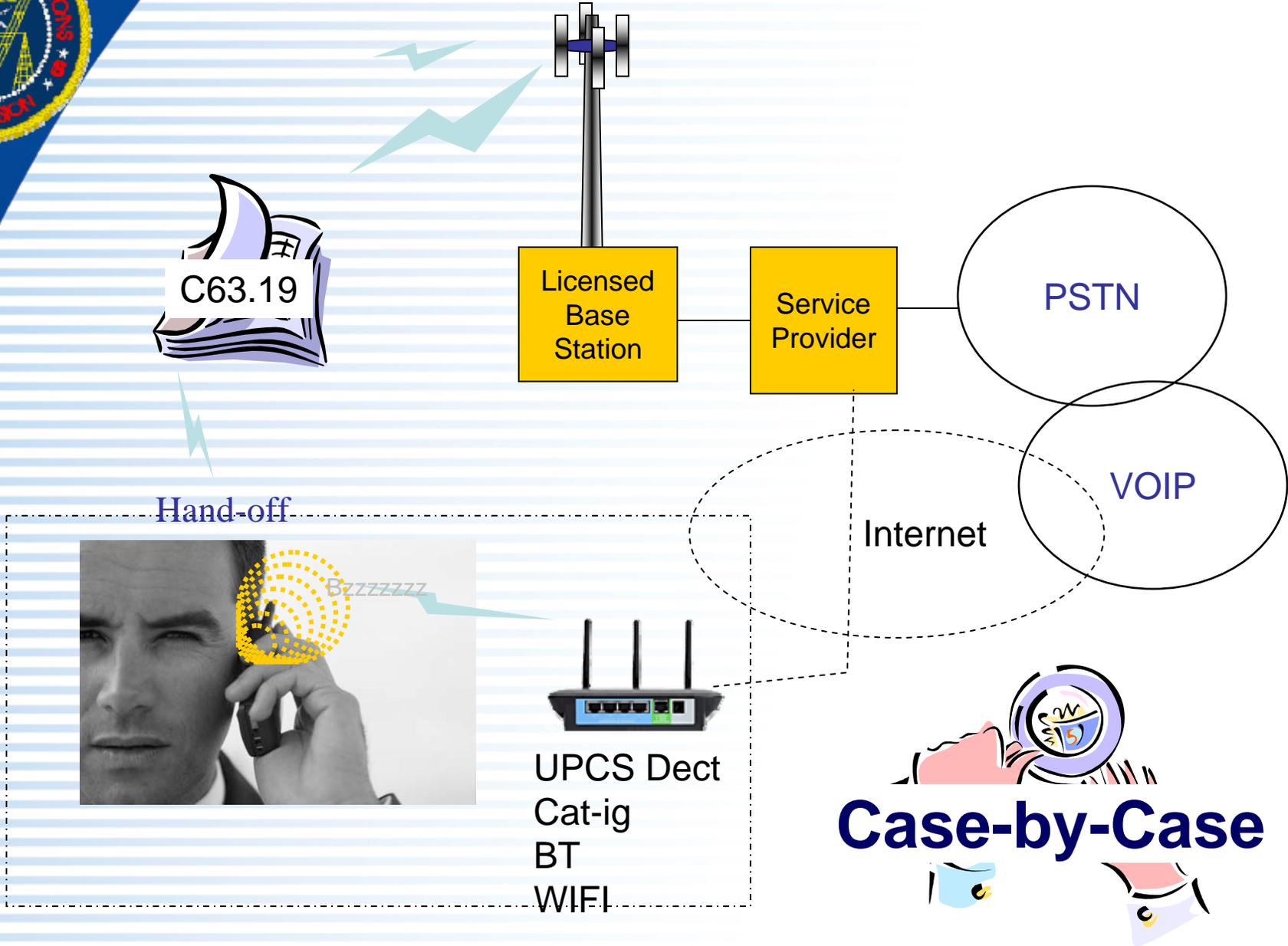


Cell-to-Wi-Fi Service





Licensed-to-Unlicensed Service





Application

- Test report exhibit (s) can be submitted as an original or C2PC application.
- Test report exhibit must be either:
 - M report
 - M and T reports.
- Only version C63.19-2006 or -2007 are applicable.
- A HAC compliance report can only be submitted for all bands and/or air interfaces defined in C63.19 -2006/2007.
- Exception - Digital handsets using WI-FI for in-door Cell to WIFI hand-off service are still eligible to be HAC rated (even though WIFI is not defined in C63.19 standards).



Application

- HAC test data for air interfaces and bands not defined in ANSI C63.19-2007 will not be accepted.
- Grant note of “HC” is required.
- Grant comment “HAC Rating M#T\$-200N “.
- M4 or M4T4 results can not declare a lower rating (i.e. M3, M3T4).
- Multiple compliance reports under one FCC ID –to represent distinct models with different HAC ratings are permissible.
 - Grant comment “HAC Ratings: M#T\$-200N, M#T\$-200N”



Permissive Changes

- Changes that effect HAC rating (change rating) must be reported as a Class II Permissive Change & the handset must be given a new model designation distinct from that of the prior version.
- The manufacturer must evaluate the equipment modification to determine if there is a change in the rating and if a Class II Permissive Change is required. Equipment changes that do not result in a change of the HAC rating being marketed and reported to the WTB do not require a Class II Permissive Change application and can be considered a Class I Permissive Change.



Permissive Changes

- A Class II Permissive Change for an M report previously granted as a M#T\$ is only acceptable if:
 - The handset is no longer going to be marketed or reported as a M#T\$ and changed to M#.
 - The change is a HAC model variation.
- Adding T-coil rating can be done using the C2PC:
 - a complete M and complete T report.
 - If there has been no product change to the handset, the M report submitted may use the same results obtained for the previous application.
- If the manufacturer builds the product with alternative components it must be tested and must show compliance using the components representing the worst case situation.



Features to be Tested

- Only held to ear modes need to be tested.
- No external special parts or ancillary devices are permitted.
- User instructions are not permitted to disable any features or degrade performance, reduce RF output power, degrade battery performance for meeting HAC compliance.
- Any settings for processing audio signals to improve the performance for the hearing impaired must be documented in the application test report.
- The antenna must be tested in the optimum performance position. an antenna extension is not obvious, a declaration from the manufacturer regarding the optimum antenna position must be described in the test report.



Features to be Tested

- Only ANSI C63.9-2007 standard can decouple the M and T rating.
- Test report packages must document the appropriate measurement plane, gauge block measurement and offset values for ANSI C63.19 versions 2006 or 2007.
- list all marketed features radio services (by 47 CFR part), air interfaces, bands and user capabilities.
- A general declaration statement noting that specific transmission modes do not operate in the held to ear mode (i.e. WI-FI, Bluetooth profile is not in held to ear modes for phone service).
- Any feature discussed above that is disabled during testing must be instinctive, or clearly documented in the user's manual.



Appendix A: Example of Test Report

- Summary
- Test Site Description
- Description of Test System
- Equipment List
- Description of EUT11
 - Model Modes Features and Capabilities
 - Justification of Held to Ear Modes Tested
- Test Procedure
- Test System Validation, Calibration and Alignment Procedures
- Detailed Measurements for M and T Ratings
- Measurement Uncertainty
- Calibration Certificates
- References and Supporting Test Data
- Detailed Test Measurement Plots