

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: Some Thoughts on Evaluation Criteria

Date Submitted: 07. March, 2015

Source: Sebastian Rey, Technische Universität Braunschweig

Address: Schleinitzstr. 22, D-31806 Braunschweig, Germany

Voice: +49-531-391-2439, FAX: +49-531-391-5192, E-Mail: rey@ifn.ing.tu-bs.de

Abstract: Evaluation criteria are necessary for the development of the standard. This presentation gives some first thoughts on these criteria.

Purpose: Enabling the Discussion for Evaluation criteria.

Notice: This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release: The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.

Some Thoughts on Evaluation Criteria

Sebastian Rey¹, Thomas Kürner¹

¹ Institut für Nachrichtentechnik, Technische Universität Braunschweig, Germany

General Thoughts

- Possibly more than one system is proposed for the standard.
- How do we decide which one (or which parts) are best suited for the standard?

- What are the figures of merit for...
 - ... achieved data rate (after subtraction of all the overhead)?
SNR, BER, data rate, spectral efficiency
 - ... complexity?
die area
 - ... power consumption?
 - ... suitability of a feedback figure for beamsteering?

- And which of these shall be investigated here?
- How shall they be investigated? Guide with Definitions of how to evaluate the figures of merit.

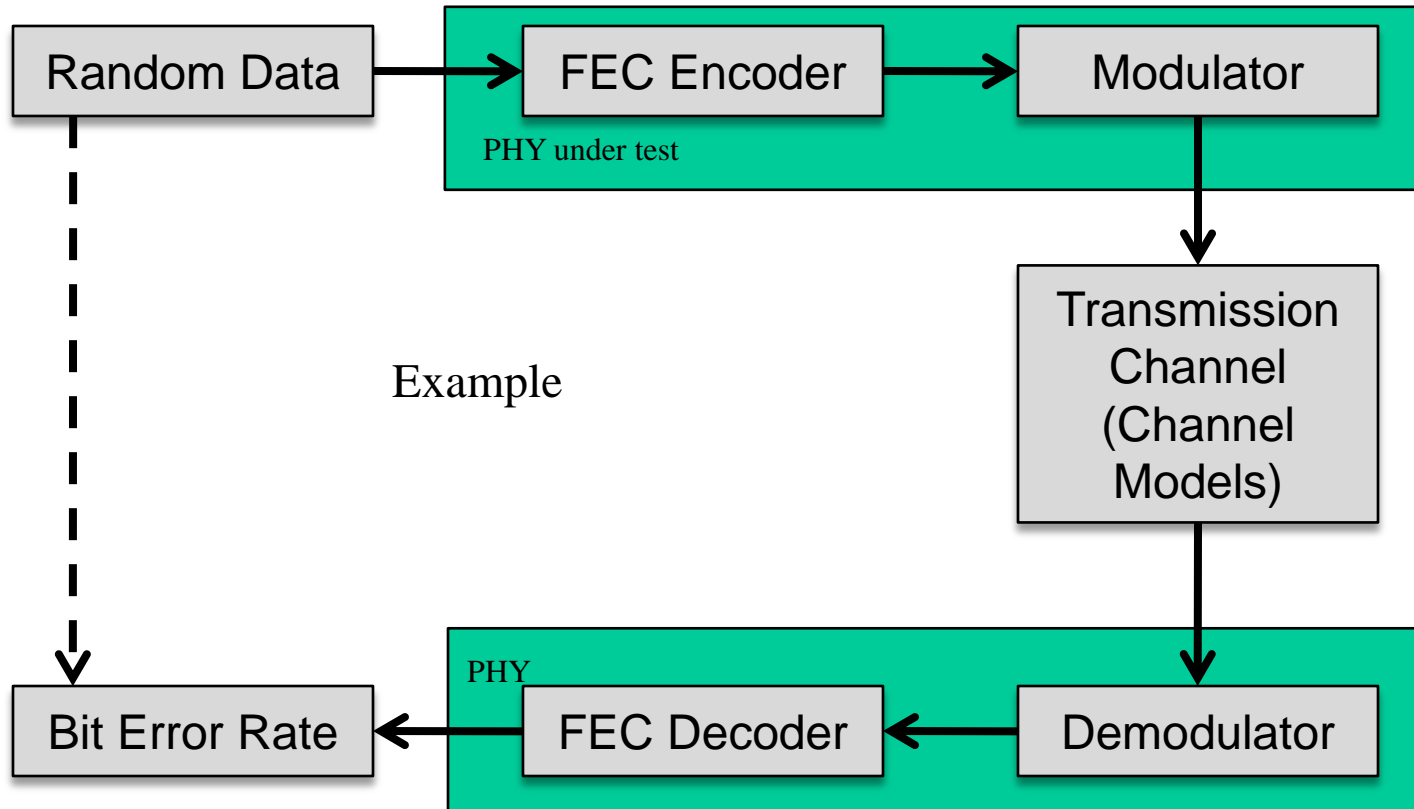
What do we have to deal with here?

From the PAR (IEEE 802.15-13-0523-07):

5.2.a. Scope of the complete standard: This project will define the PHY and MAC specifications for high data rate wireless connectivity with fixed, portable and moving devices. Data rates will be high enough to satisfy a set of consumer multimedia industry needs, and to support emerging wireless switched point-to-point applications.

5.4 Purpose: The purpose is to provide a standard **for low complexity, low cost, low power consumption**, and high data rate wireless connectivity among devices. Data rates will be high enough to satisfy a set of consumer multimedia industry needs, and to support emerging wireless switched point-to-point applications in data centers, wireless backhaul/fronthaul intra-device communication and kiosk downloading.

Link level simulations for the evaluation of the performance of one proposed PHY



- Equivalent baseband model

Danke für Ihre Aufmerksamkeit!
(Thank you for paying attention!)

Dipl.-Ing. Sebastian Rey
rey@ifn.ing.tu-bs.de