

Abstract

The present invention is directed to a method for improving forward error correction in serial coding in an in-vehicle data transmission and creates, among other things, the advantage over the prior art that the physical behavior on a transmission channel is always

5 deterministically controllable despite a reduction in resource requirements. The proposed method reduces the number of gates in the forward error correction encoders by minimizing the exponential growth of the number of required gates compared to the state of the art by calculating the forward error correction on individual subwords. According to the proposed method, the bit errors are minimal and a transmission error can be corrected efficiently, i.e.
10 with minimal technical effort. In addition, the encoders used are designed with a minimum number of gates and an interleaving is implicit in the proposed method, which is based on the fact that so-called burst errors can be corrected particularly advantageously. This implicit interleaving makes it possible to dispense with the conventional buffer memory required for explicit interleaving. In addition, the invention ensures that user data together with correcting
15 metadata can be encoded advantageously with regard to transmission. According to the invention, it can be ensured that not only the user data is line-coded or line-encoded, but also the correction data. The present invention is also directed to an analogously designed system arrangement for carrying out the method and to a computer program product with control commands which carry out the method.

20 Figure 5