

POLAR ENCODING METHOD AND APPARATUS AND POLAR DECODING METHOD AND APPARATUS

ABSTRACT

This application discloses a polar encoding method and apparatus and a polar decoding
5 method and apparatus, to apply polar codes to source coding and decoding, to improve source
coding and decoding performance. The method may be implemented by using the following steps:
obtaining to-be-encoded source bits; performing first polar encoding on the to-be-encoded source
bits to obtain encoded source bits, where the first polar encoding includes first transformation and
second transformation, the first transformation is polarization transformation, a mother code length
10 corresponding to the first transformation is N_s , the polarization transformation is performed on the
to-be-encoded source bits to obtain first source bits, and the second transformation is performed
on the first source bits to obtain the encoded source bits; determining assistance information based
on the first source bits; and outputting a source coding codeword, where the source coding
codeword includes the encoded source bits and the assistance information. Information about
15 original source bits is added to a source coding result, so that source decoding can be assisted,
thereby improving performance of source polar codes.

20 FIG. 4