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(54) **PREDICTIVE AND RESIDUAL CODING OF SPARSE SIGNALS FOR WEIGHT UPDATE COMPRESSION**

(71) Applicant: **Nokia Technologies Oy**, Espoo (FI)

(72) Inventors: **Homayun Afrabandpey**, Espoo (FI);
               Hamed Rezazadegan Tavakoli, Espoo
               (FI); **Francesco Cricrì**, Tampere (FI);
               Honglei Zhang, Tampere (FI);
               Goutham Rangu, Tampere (FI)

(57)   **ABSTRACT**

An apparatus comprising: at least one processor; and at least one non-transitory memory storing instructions that, when executed by the at least one processor, cause the apparatus at least to: receive a signal, the signal comprising a sparse signal; perform residual coding on the signal; perform predictive coding on the signal; determine a residual, the residual comprising a residual of the signal and a base signal or a residual of an approximation and the base signal, the approximation being an approximation of the signal; and determine whether to transmit the residual or the signal over a communication channel.

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