LIST OF SYMBOLS

a	: An action
b	: Bit information
e	: Errors
h	: Hidden layer
y	: Output of neural network
C	: Channel capacity
$A(t)$	: Action at time step t
$e_j^{(h)}$	: The error of the j-th neuron of the h-th layer
J_t	: Return following time t
L_v	: The LLR values in VND
$P(X)$	: Marginal probability of X
R_a	: The reward obtained by the agent choosing an action a
s, s'	: States
$S(t)$	: State at time step t
Z	: Positive integer
$\mathcal{A}$	: Set of all actions space
$\mathcal{D}_S$	: Domain source
$\mathcal{D}_T$	: Domain target
$\mathcal{E}$	: Complexity in CND
$\mathcal{F}$	: Complexity in VND
$\mathcal{M}$	: Modulation
$\mathcal{N}$	: Normal distribution
$\mathcal{O}$	: Complexity
$\mathcal{W}$	: Weight of neural network
$\mathcal{W}_{\mathcal{D}_S}$	: Weight in domain source
$\mathcal{W}_{\mathcal{D}_T}$	: Weight in domain target
$\mathcal{R}$	: Coding rate
$\mathbb{A}$	: Random number with normal distribution

$\mathbb{B}$	: Random number with normal distribution
$\mathbb{I}(\cdot)$	: The indicator function
$\mathbb{E}[X]$	: Expectation of a random variable X
$\mathbb{N}[k]_{m-n}$	: Neural network structure with the total number of neurons $\mathbb{N}[k]$ in the hidden layer
$\mathbb{J}$	: Complexity of transfer learning
$\mathbb{K}$	: Complexity of reinforcement learning
$\mathbb{L}$	: Complexity of traditional rateless coding
$\mathbb{R}$	: Real values
$\mathbf{B}$	: Base matrix
$\mathbf{G}$	: Generator matrix
$\mathbf{H}$	: Parity check matrix
$\mathbf{W}$	: Weight matrix
$\mathfrak{h}$	: Channels
$\mathfrak{X}$	: MC iteration in traditional rateless coding
$\mathfrak{Z}$	: EP iteration in traditional rateless coding
$\mathcal{M}$	: Number neuron in the layer
$\mathcal{N}$	: Number of edges connected to each neuron
$\mathcal{P}$	: Number of edges connected in CND
$\mathcal{Q}$	: Number of edges connected in VND
§	: Global iteration of traditional rateless coding
$u \to v$	: CND to VND
$v \to u$	: VND to CND
α	: Learning rate parameter
ε	: Probability of taking a random action in an ε-greedy policy
$\pounds$	: A set of episodes
π	: Policy (decision-making rule)
$\pi_a(s)$	: Action taken in state s under deterministic policy π
$\pi^\star$	: Optimal policy
δ_{MSE}	: Mean square error
ξ	: Sign error rate
γ	: Discount factor parameter
$\arg\max_a Q(s,a)$	: A value of a at which $Q(s,a)$ takes its maximal value
max	: Maximum

$\nabla\mathcal{L}(\mathcal{W})$	: Partial derivatives of $\mathcal{L}(\mathcal{W})$ with respect to $\mathcal{W}$
$\in$	: An element of; e.g., $a \in \mathcal{A}$, $r \in R$
$\boxplus$	: The box-plus operation
$\longleftarrow$	: Assignment