List of Symbols

Symbols are listed here as used in the introductory part of this Thesis. The symbols used in *the Publications* may be Publication specific, and are defined within each Publication.

$\hat{\cdot}$	estimate of a quantity or signal	f	frequency, or activation function
$\Delta\cdot$	shift or interval	f_D	Doppler shift
$\cdot'$	quantity with a different value	G	antenna gain
$\cdot_c$	quantity referring to carrier, or to control command period	h	FIR coefficient
		i	propagation path index
$\cdot_D$	referring to Doppler	K	number of neural network inputs
$\cdot_i$	in-phase component of a signal, or referring to ith propagation path , or ith neuron input	k	summation index
		L	polynomial degree, or number of neural network outputs
$\cdot_q$	quadrature component of a signal	l	summation index, or propagation path length
$\cdot_N$	quantity referring to filter of length, or order N	M	number of filter denominator coefficients, or number of bits per control interval, or number of neuron inputs
$\cdot_q$	quadrature component of a signal		
$\cdot_r$	quantity referring to a received signal	m	summation index
		n	discrete time sample index, or summation index
$\cdot_t$	quantity referring to a transmitted signal	N	number of FIR, or filter numerator, coefficients
$\cdot_{long}$	long-term quantity	O	neuron output
$\cdot_{max}$	maximum of a quantity	P	power
$\cdot_{short}$	short-term quantity	p	probability density function
		R	number of propagation paths
		S	sequence length in samples
α	angle between the mobile speed and transmitted radio wave	s	weighted sum of neuron inputs
θ	phase angle	t	propagation delay, or continuous time index
σ	square root of mean squared error, or square root of variance	U	number of mobile users in a system
τ	time interval	v	mobile speed
λ	wavelength	$\bar{v}$	mobile speed and direction
		w	neuron connection weight
a	filter denominator coefficient	x	noiseless signal (the noisy counterpart is y)
A	short term signal amplitude		
b	filter numerator coefficient	X	processing block input signal sample value
C	number of context layer neurons		
c	transmitter power level setting, or speed of light	$XCorr$	cross-correlation
		y	noisy signal (the noiseless counter part is x)
d	control loop delay in chip durations, or physical distance	Y	processing block output signal sample value, or radio channel output
E	envelope of the received fading signal, or field strength		