

<b>Content</b> .....	1
Preface.....	4
<b><u>Part 1: Human Subjects and Artificial Systems</u></b> .....	11
1. Introduction.....	11
2. Motivation.....	16
3. The Role of Interaction Reliability between a Human Subject and an Artificial System in Human Existence and Culture.....	20
4. Model of Human Subject's Interacting with Artificial Systems....	28
5. Human Vigilance, Attention and Its Natural Limits.....	43
5.1 Attention stages.....	52
5.2 Proband fatigue and micro-sleep markers.....	60
5.3 Attention degradation measurement.....	64
5.4 Electromagnetic activity of the brain.....	67
6. Processes and Phases of, and the Reasons for the Decrease in Driver's Attention.....	71
7. Human Reaction Time and System Reaction.....	88
8. Reliability of a Human Subject's Reaction.....	95
<b><u>Part 2: Measuring of Attention</u></b> .....	100
9. Indicators of Attention Level and Related Problems.....	100
9.1 Direct indicators.....	101
9.2 Indirect indicators.....	103
9.3 Data-bases of attention level parameters.....	110
9.4 Regions of acceptable attention.....	127
9.5. Other kinds of attention level indirect indicators.....	148
9.6. Problems with quasi-periodicity and quasi-stationarity of time- series.....	162
<b><u>Part 3: Drowsiness Prediction and Warning</u></b> .....	172
10. Vigilance Decrease Classifiers and Micro-sleep Predictors.....	172
11. Warning Systems.....	178

<b><u>Part. 4: References</u></b> .....	182
12. Literature.....	182
13. Appendices.....	194