

Kesejahteraan Mental dan Biofeedback

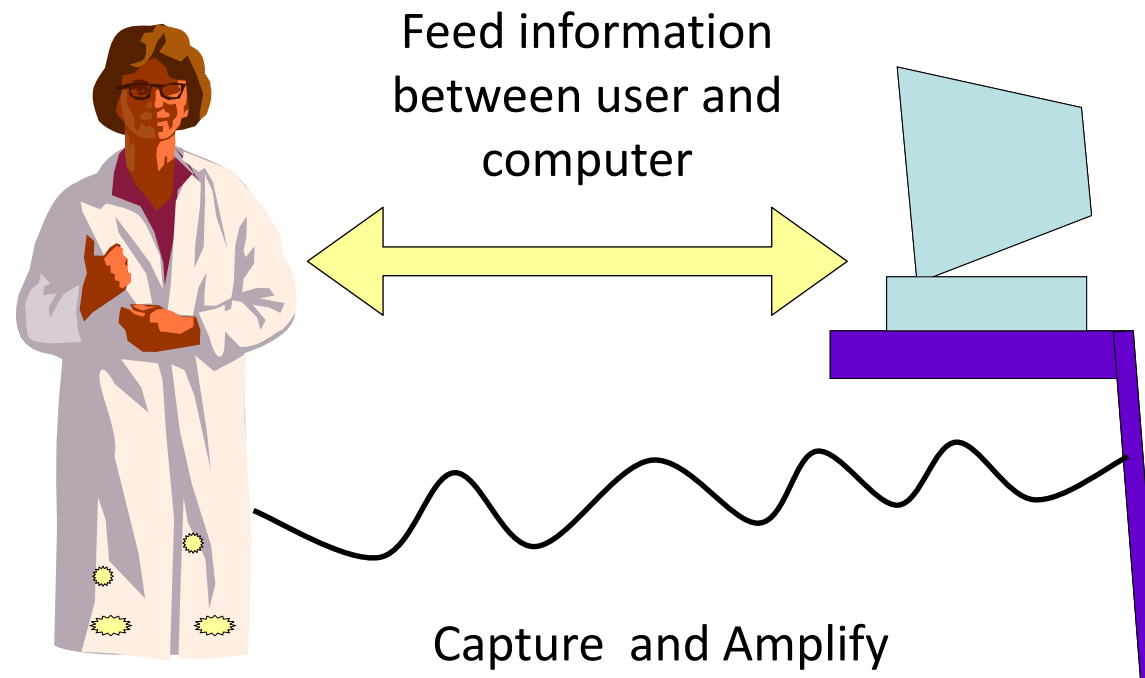
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Pusat Bahasa Moden & Sains Kemanusiaan

Universiti Malaysia Pahang, Pekan, Pahang

Bio – feed – back Psycho - Physiology



Neurofeedback / Brainfeedback

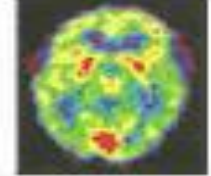
Neurofeedback, also known as EEG (electroencephalogram) biofeedback, is a therapeutic intervention that provides immediate feedback from a computer-based program that assesses a client's brainwave activity. The program then uses sound or visual signals to reorganize or retrain these brain signals. By responding to this process, clients learn to regulate and improve their brain function and to alleviate symptoms of various neurological and mental health disorders.



Types of Brainwaves



BETA: 15 - 50 Hz
Alert / Working



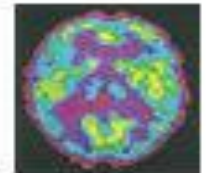
ALPHA: 9 - 14 Hz
Relaxed / Reflecting



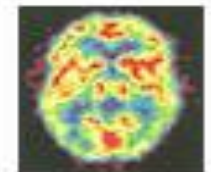
THETA: 5 - 8 Hz
Drowsy / Idealing



DELTA: 2 - 3 Hz
**Dreamless
Deep Sleep**



BETA: 15 - 30 Hz
**REM Sleep /
Dreaming**



Central Nervous System

Peripheral Nervous System

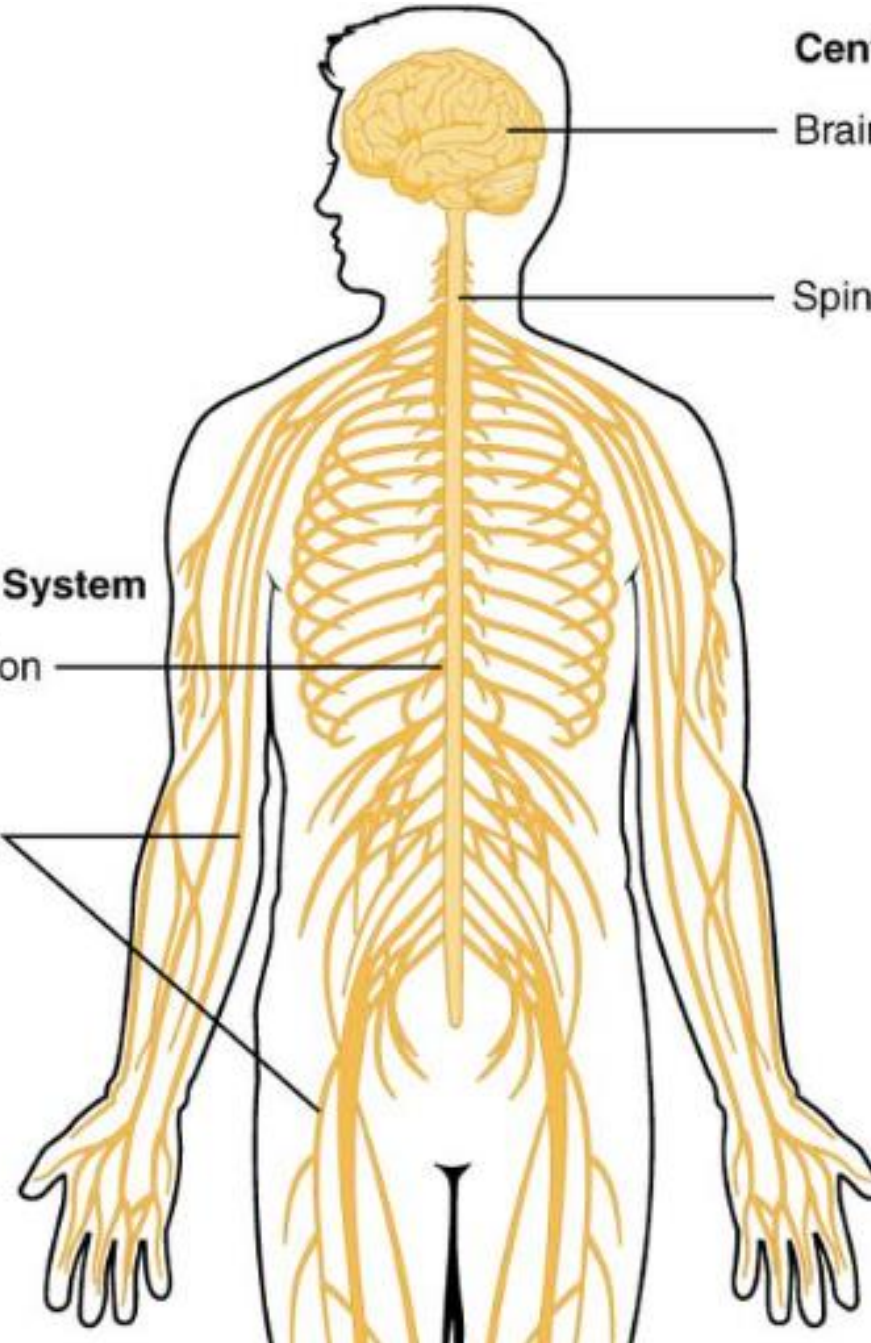
Central Nervous System

Brain

Spinal cord

Ganglion

Nerve



Beta & Gamma

Rapid
Breathing

Constrict Blood
Flow

Muscle
Tension

Low Temperature

Low HR
Variability



Computer Based equipment's

Thought Technology's
Infinity



J&J's C2 Physiolab



(Photos from manufacturer's or BMI's websites)

Stens' Nexus 10



Cheap & Stand alone equipment's

Stress eraser



U-control for UI



Em-wave



myotrac



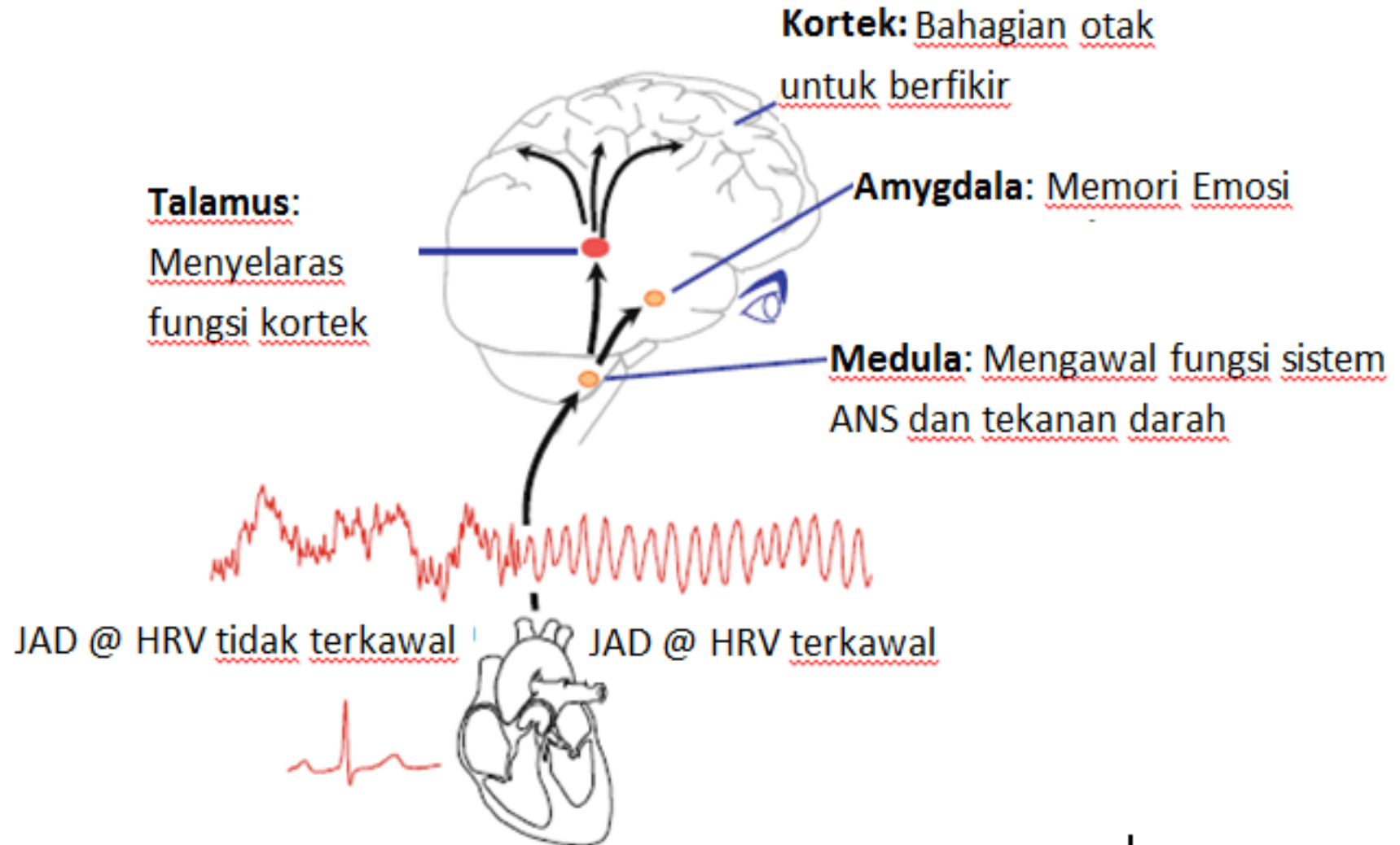
SC911

Thermometer



(Photos from BMI's website)

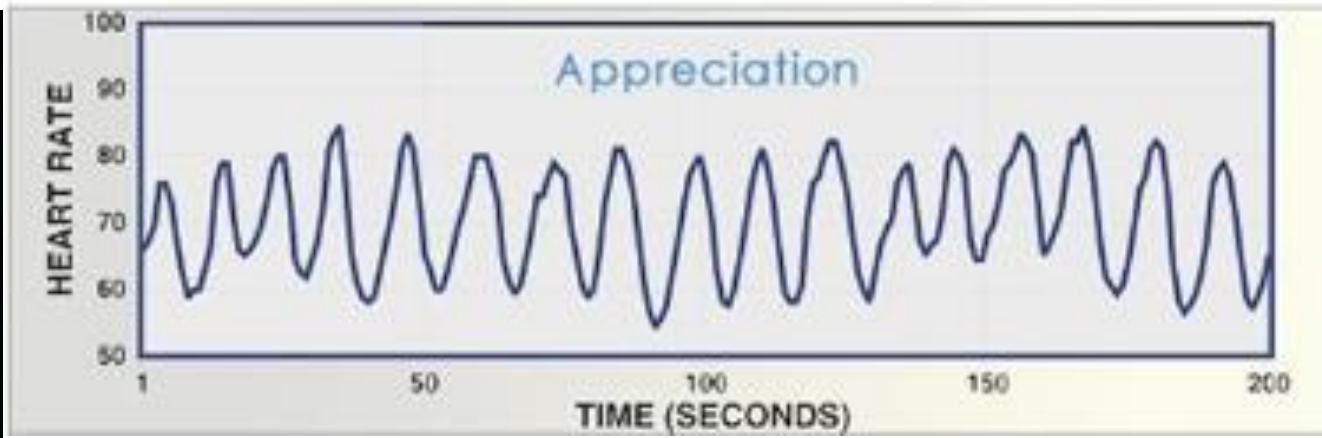
Mind and Body Interaction



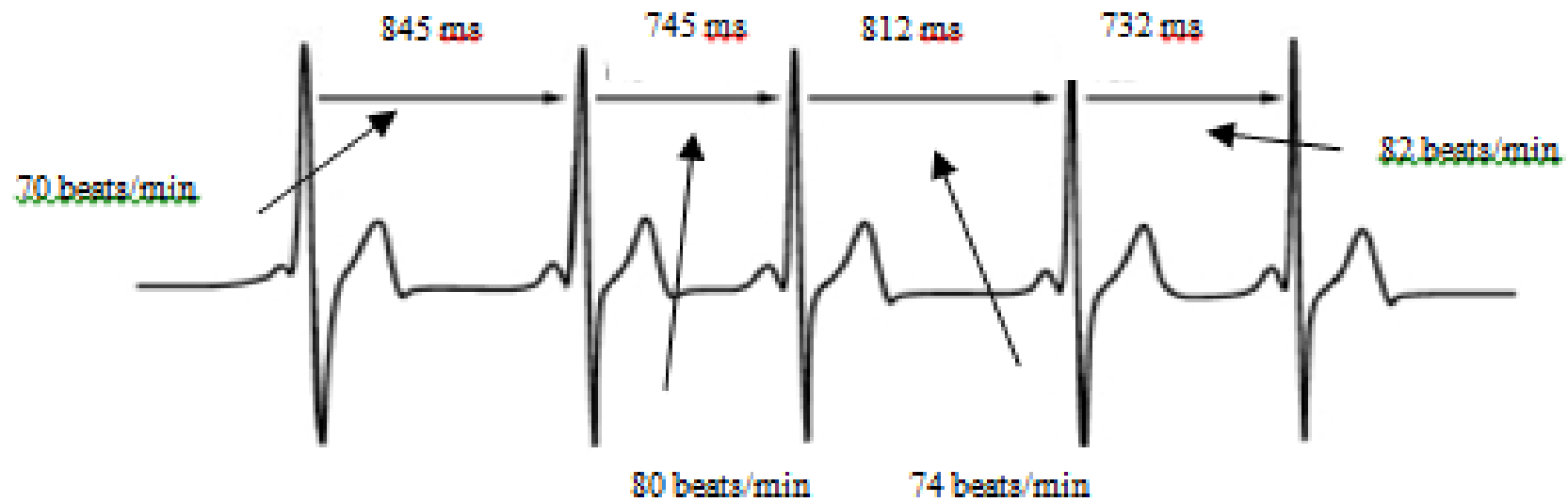
Heart Rate variability

Heart rate variability (HRV) is total variability in heart rate, often measured by the standard deviation of nonartifactual interbeat intervals, not contaminated by missed heartbeats. (Task Force, 1996).

Pulse Rate Pattern



Heart Rate Variability - HRV

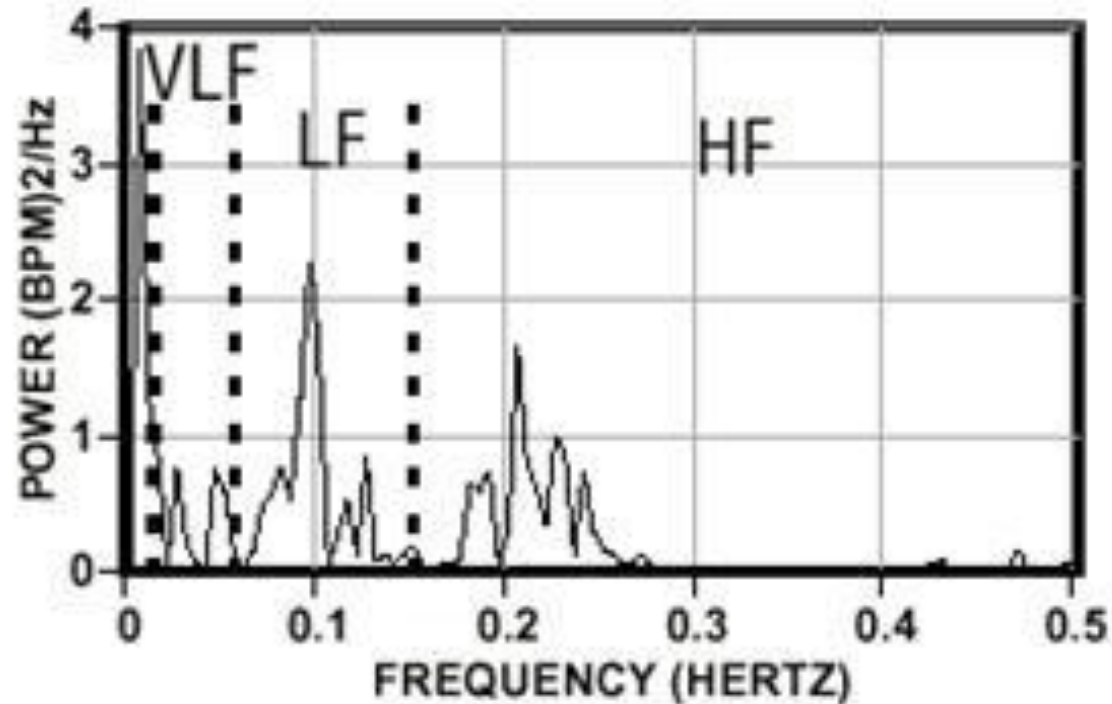


HRV Power Spectrum

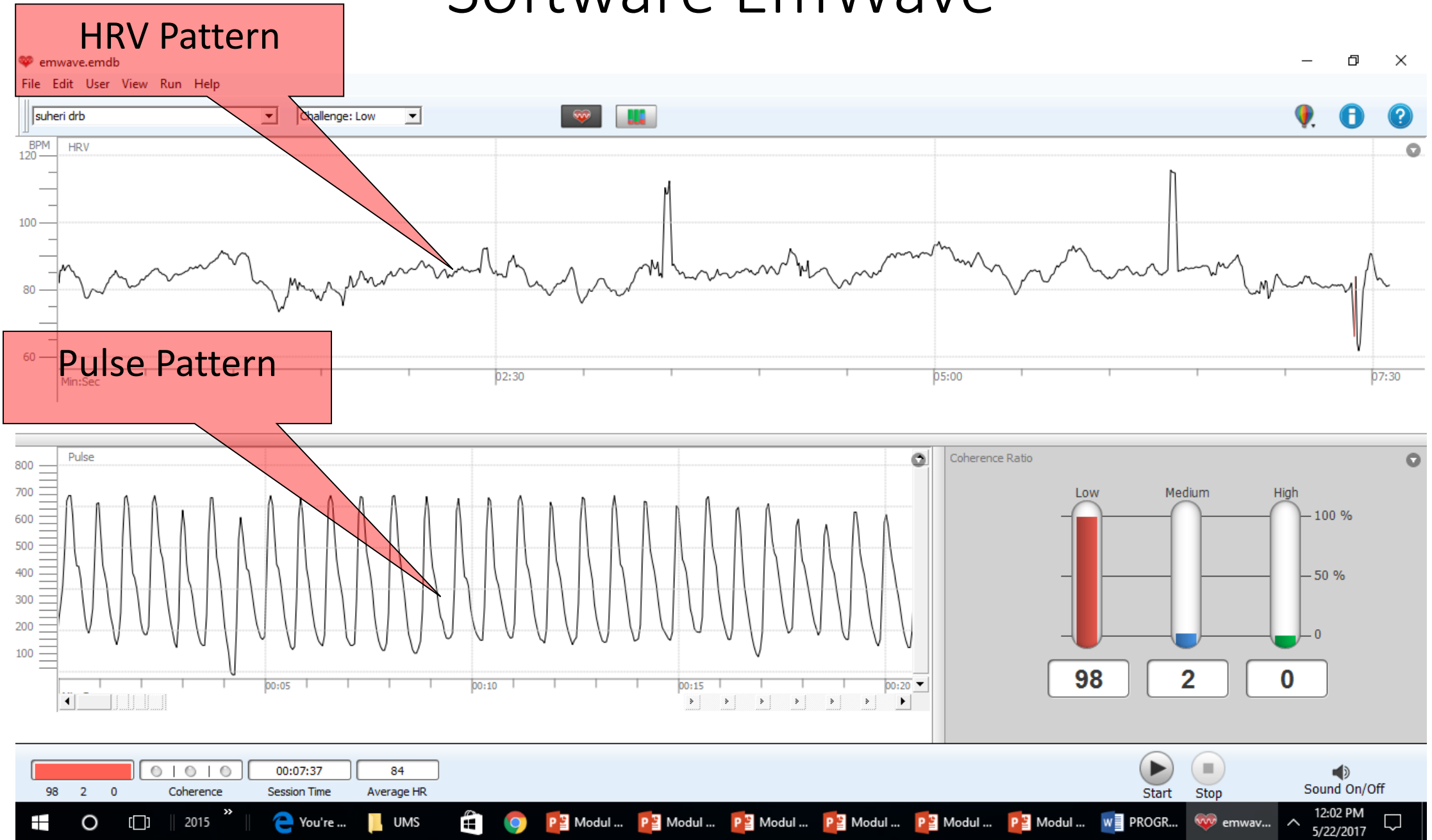
Very low frequency (VLF) band (0.005-0.05 Hz)

Low-frequency (LF) band (0.05-0.15 Hz)

High-frequency (HF) band (0.15 – 0.4 Hz)

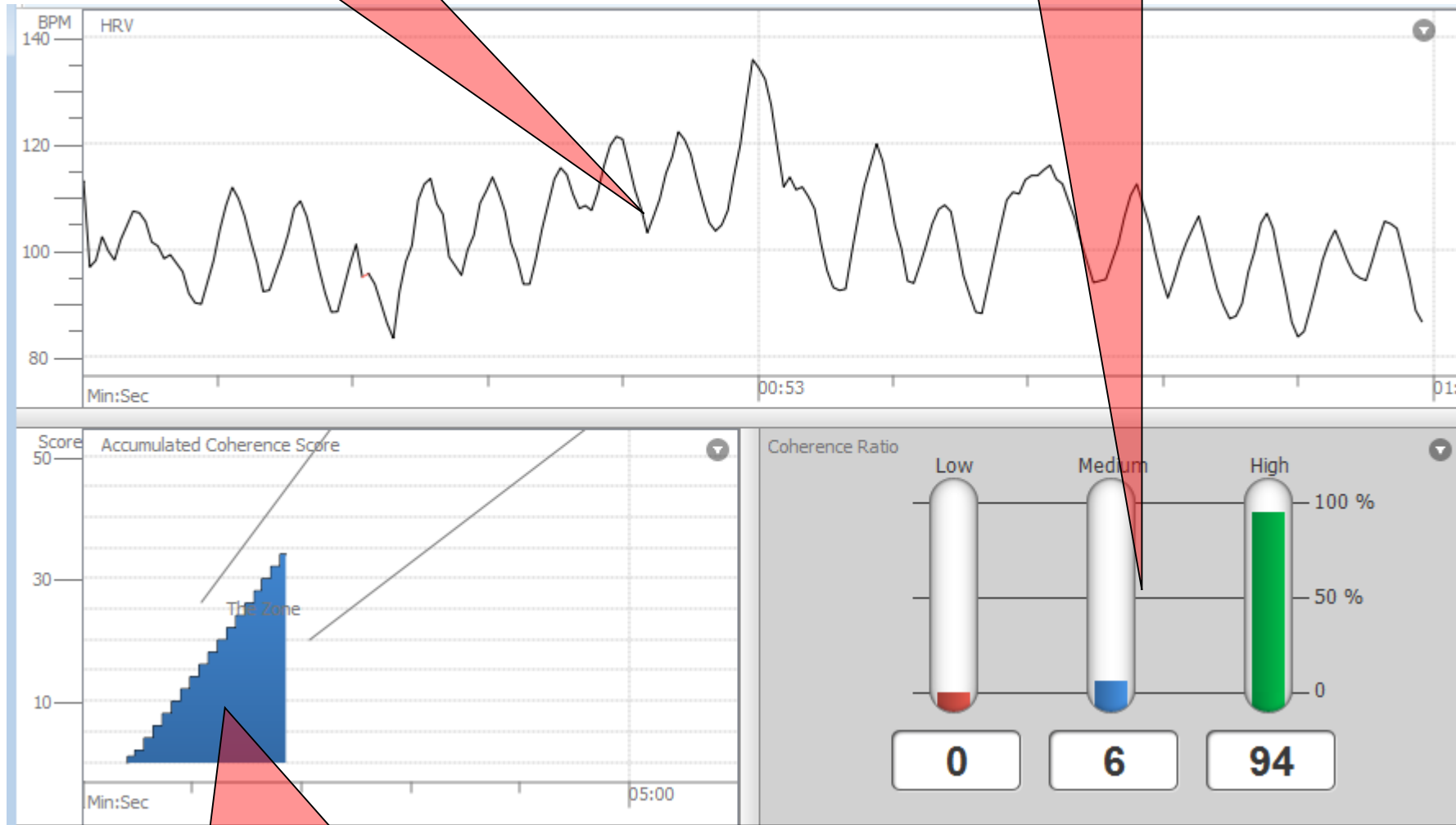


Software EmWave



HRV Pattern

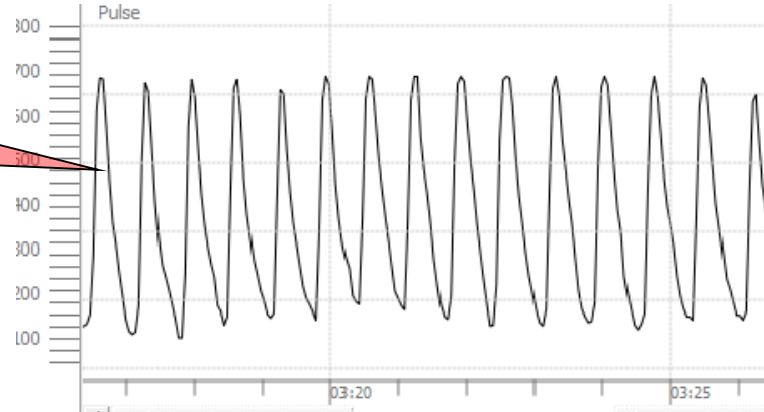
Coherence Score



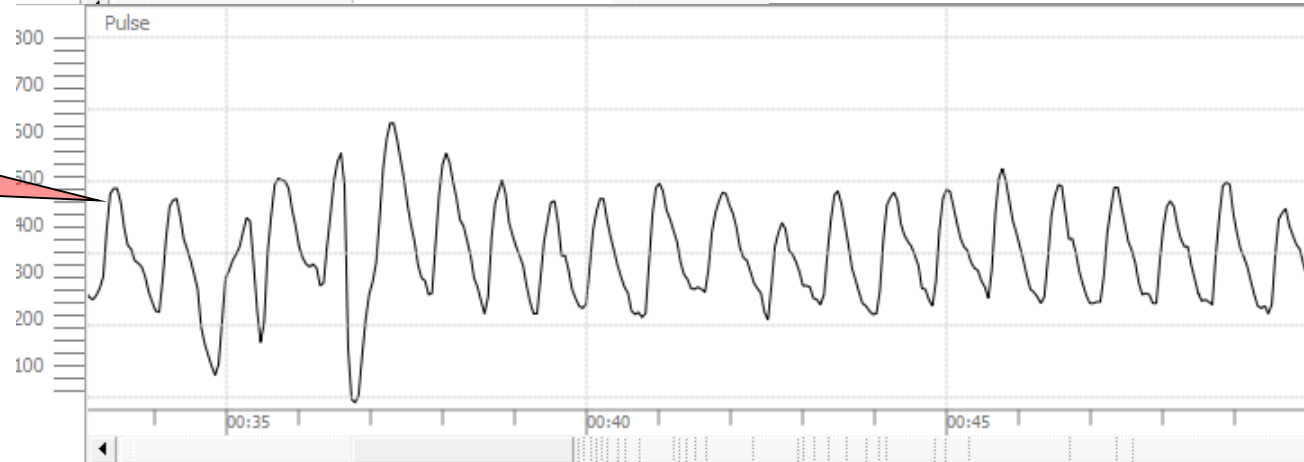
Total Power Spectrum Score

Pulse Amplitude

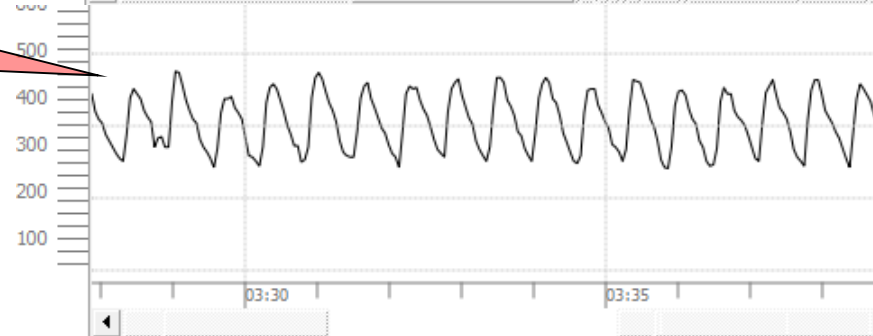
Pulse Kuat

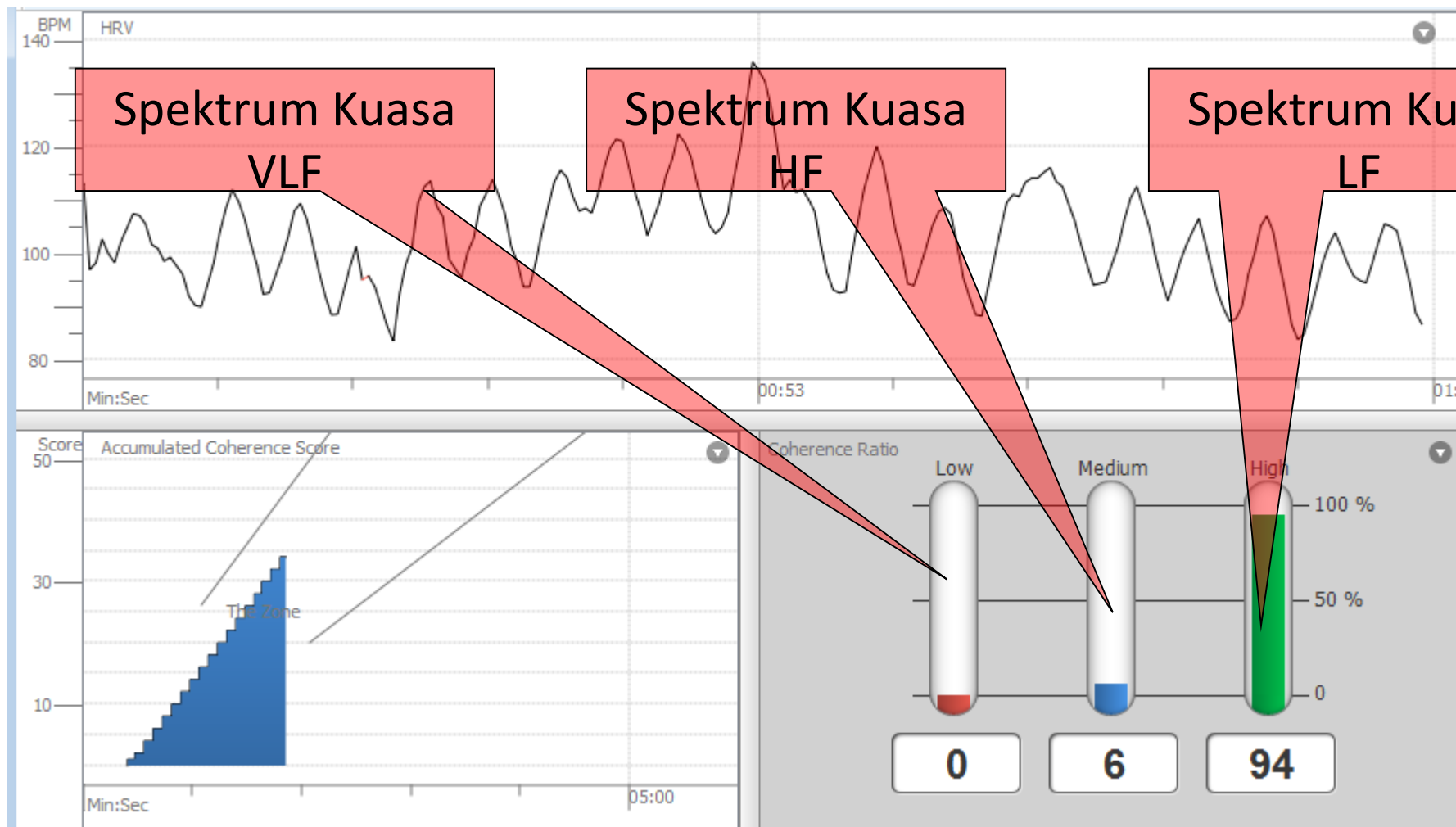


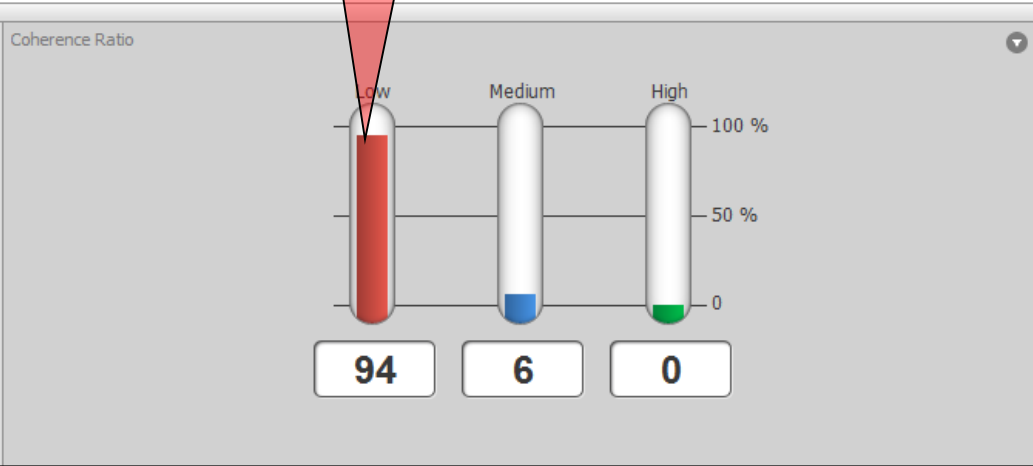
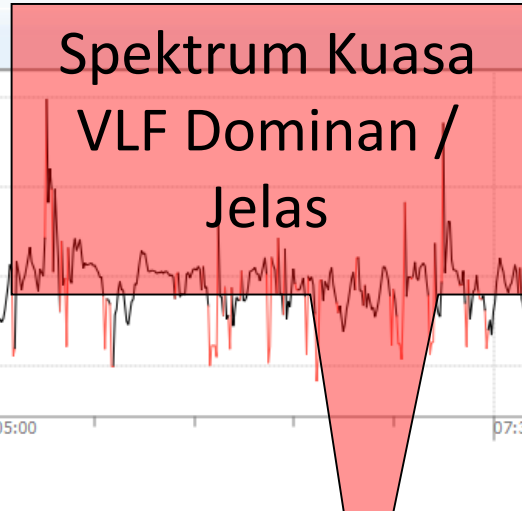
Pulse Sederhana



Pulse Kecil

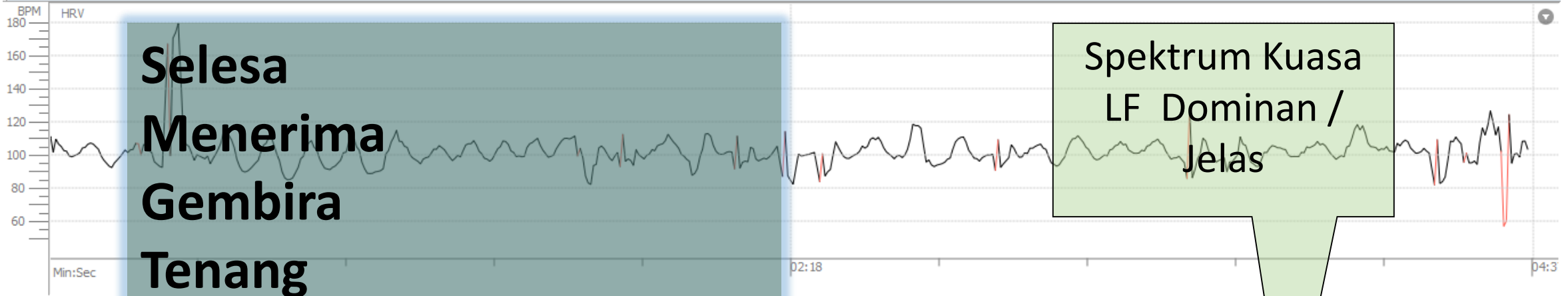




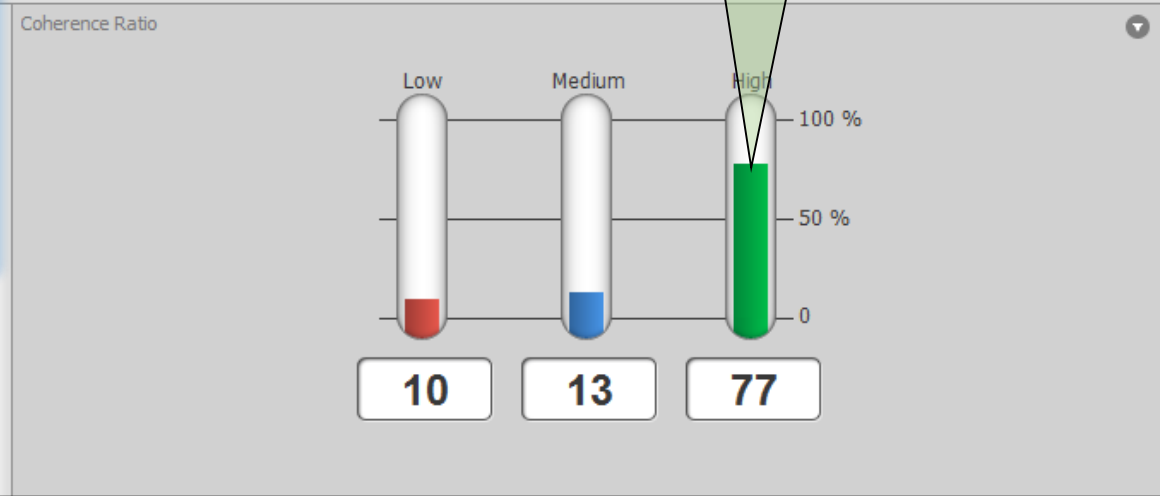
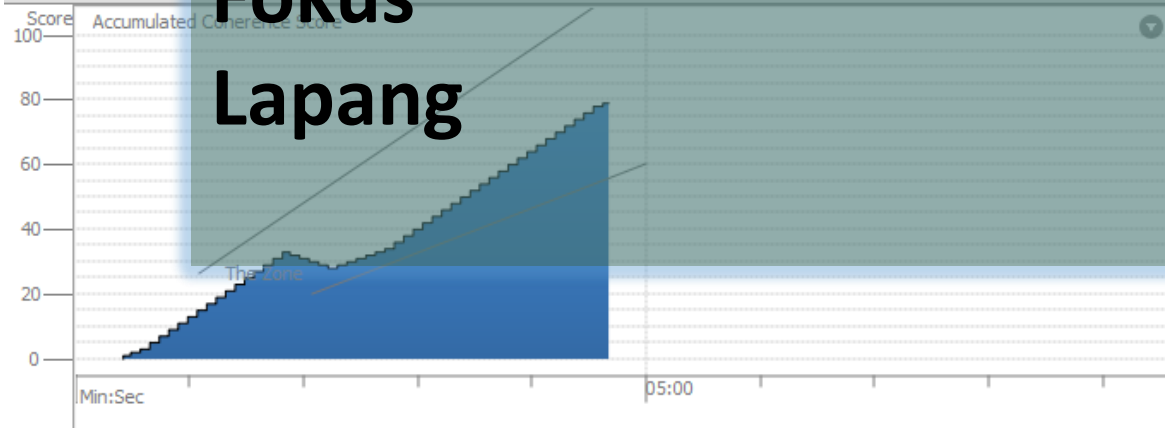


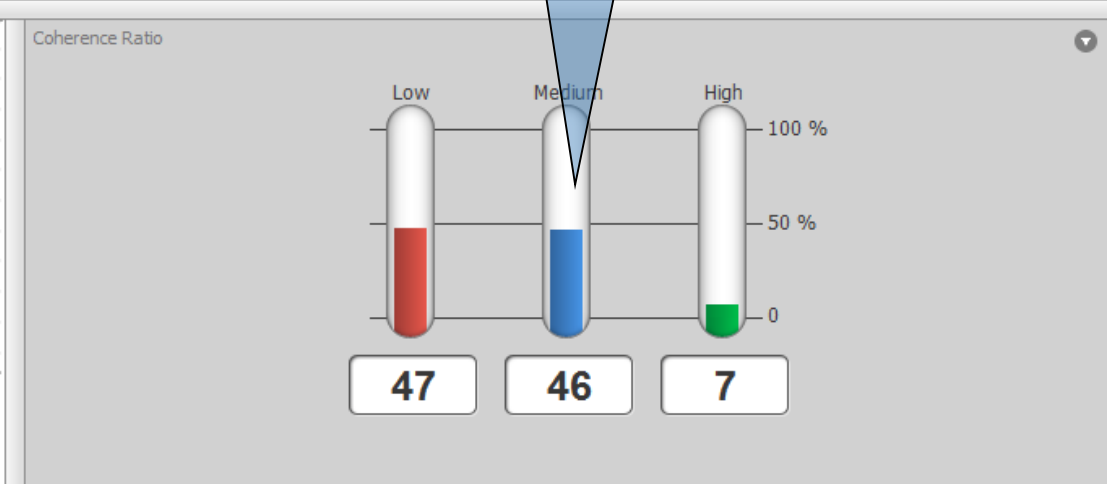
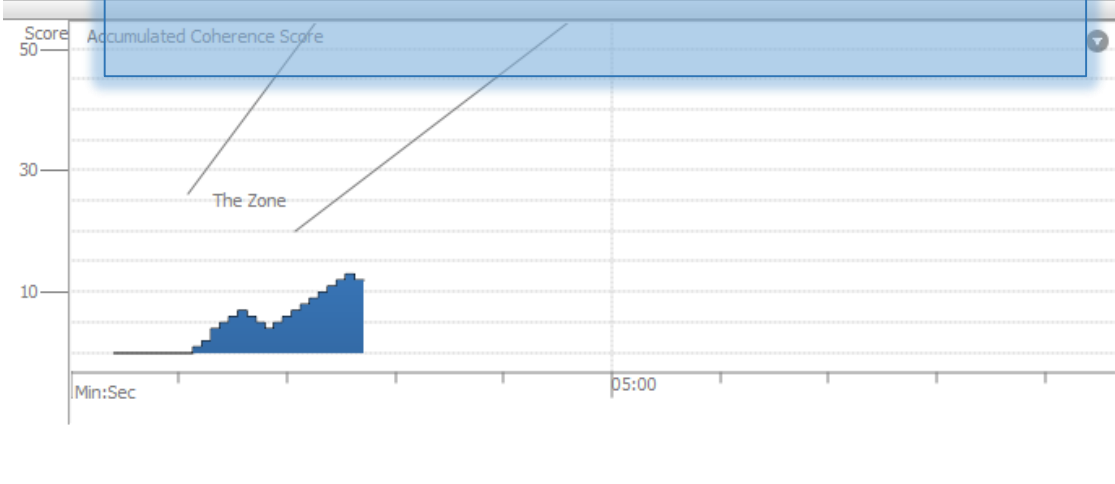
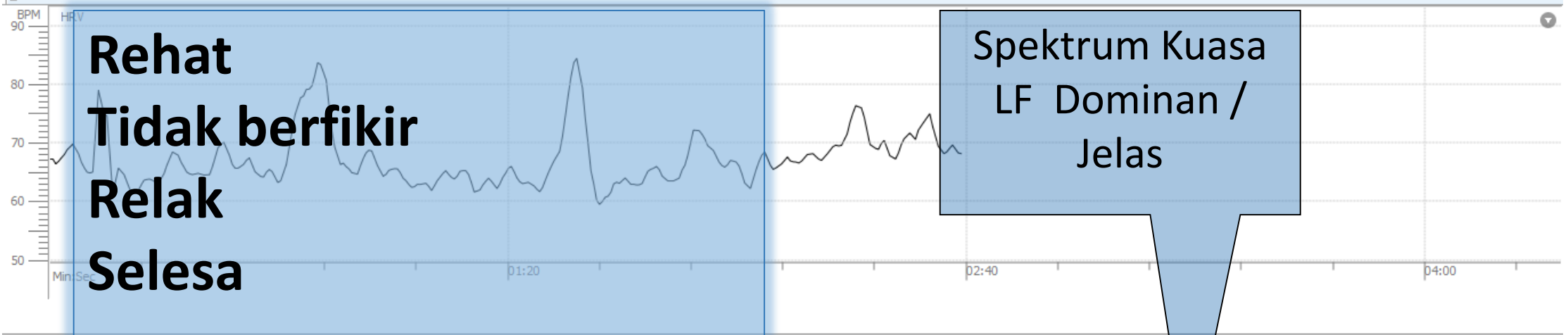
94 6 0 Coherence 00:09:55 Session Time 73 Average HR

Start Stop Sound On/Off



Selesa
Menerima
Gembira
Tenang
Fokus
Lapang

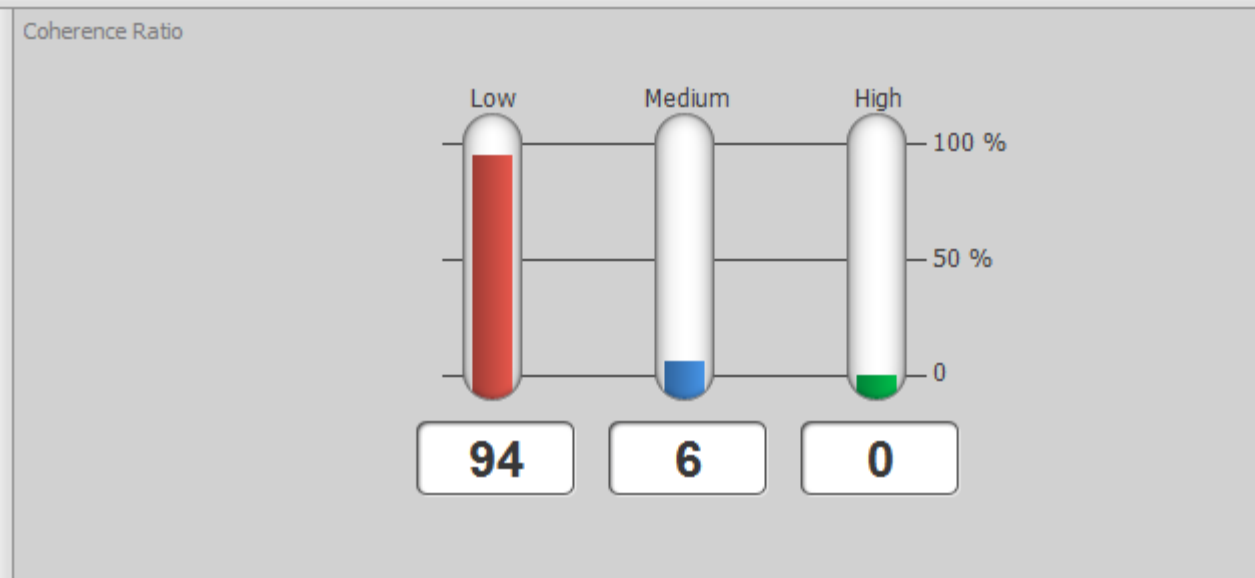
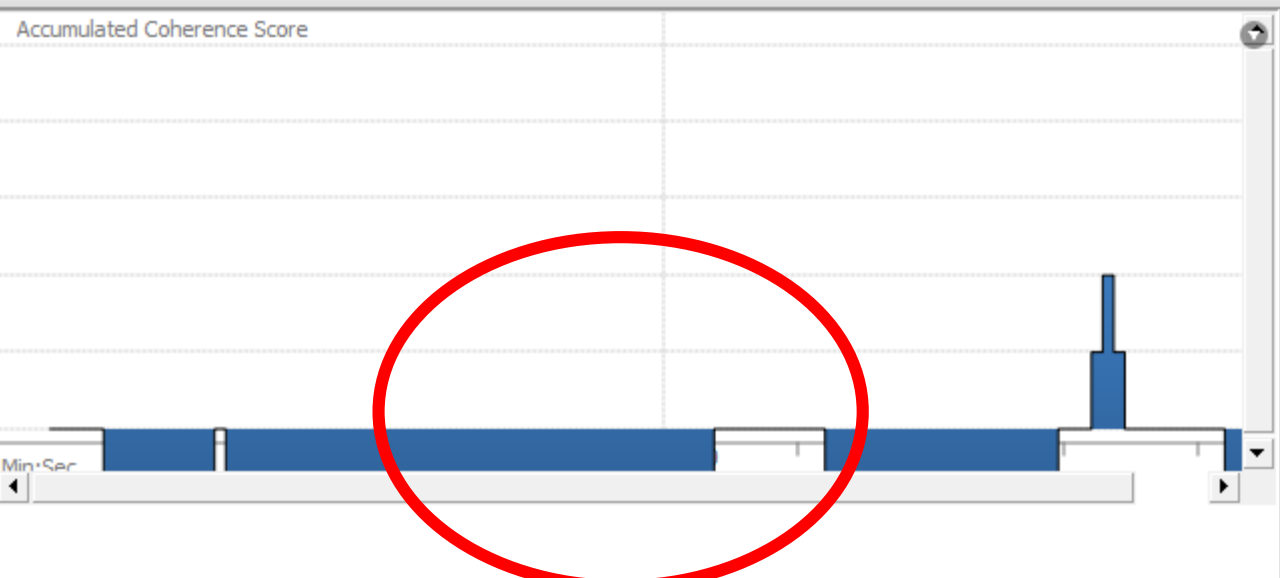
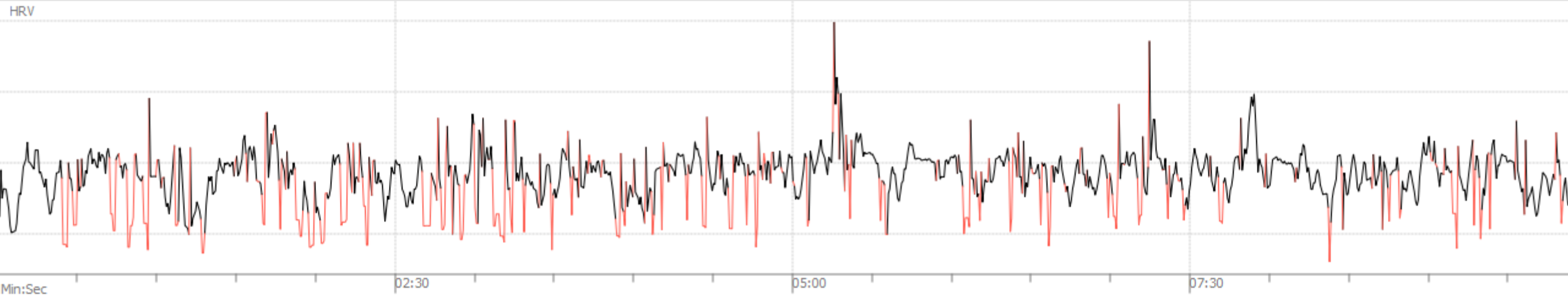


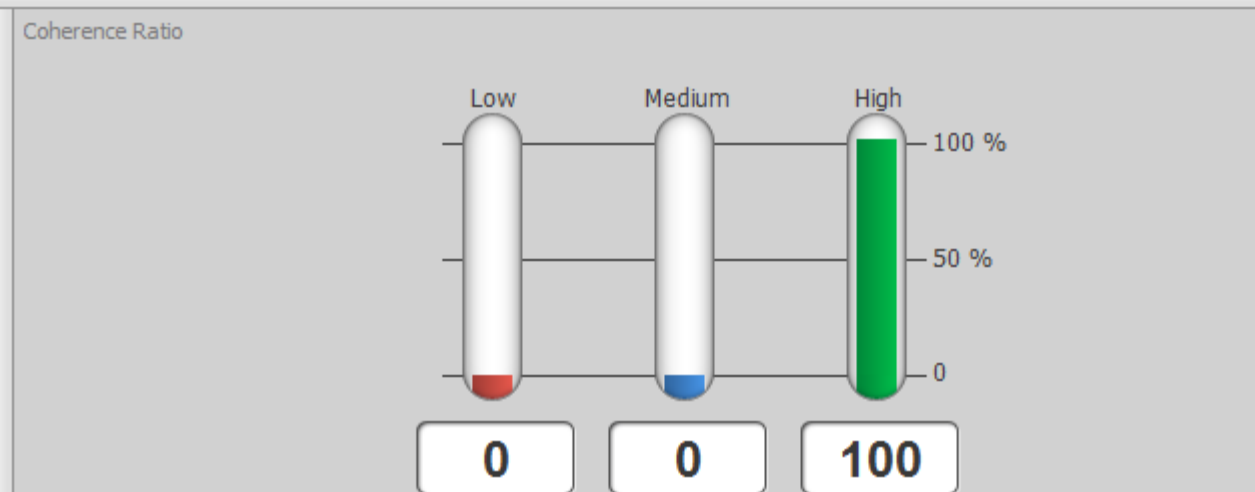
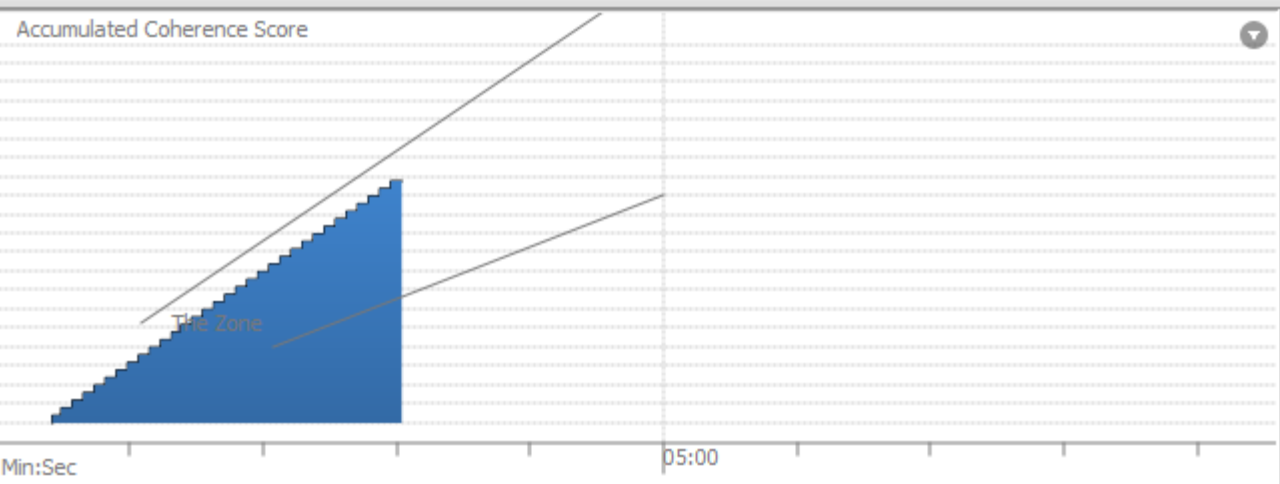
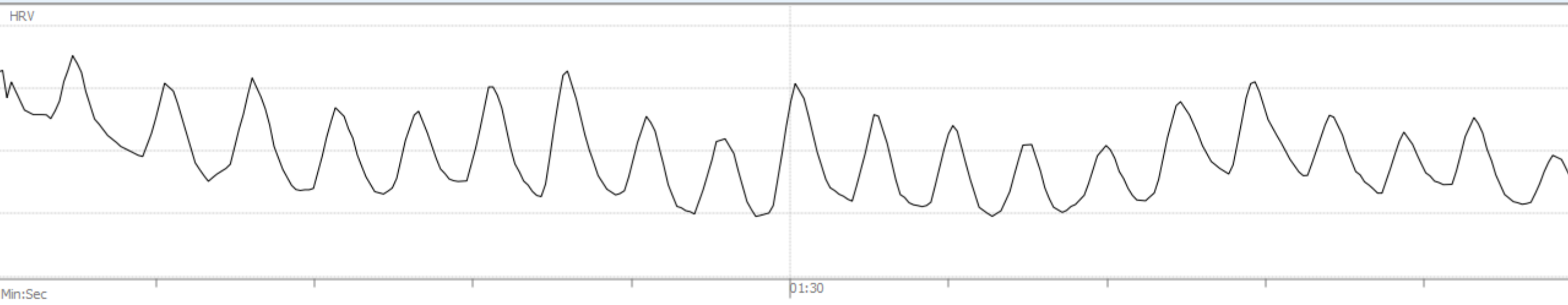


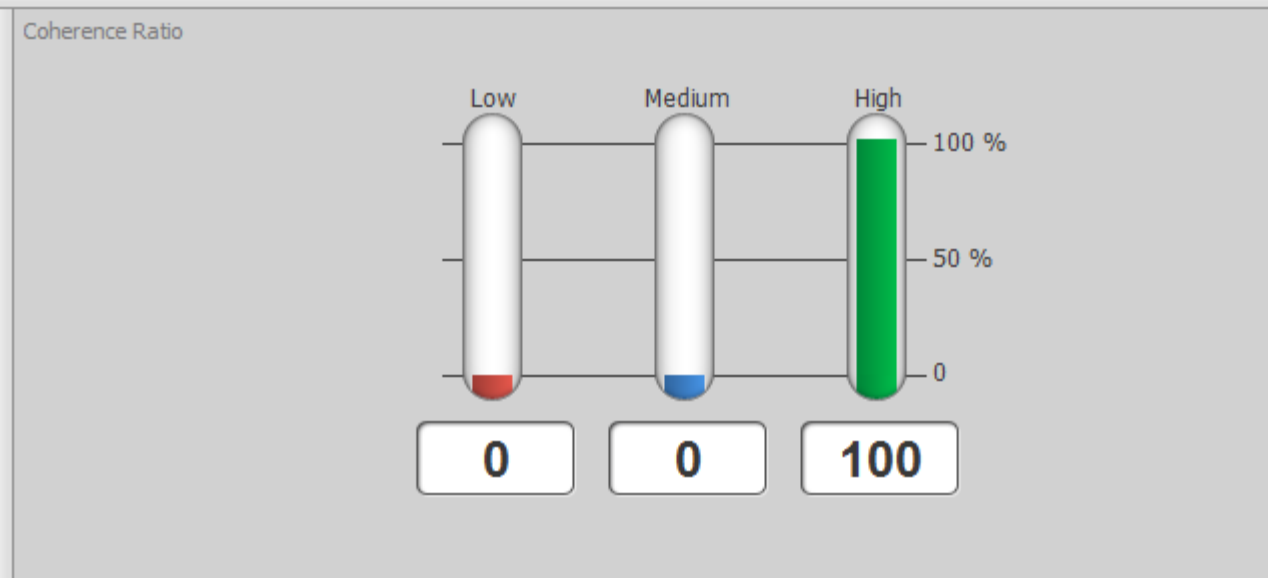
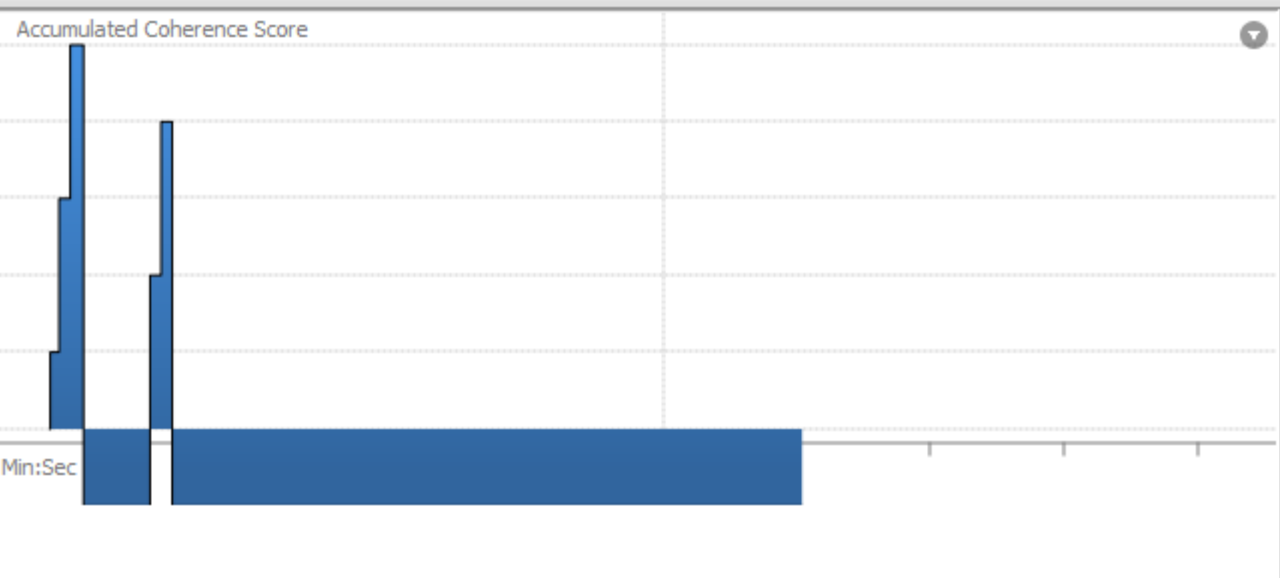
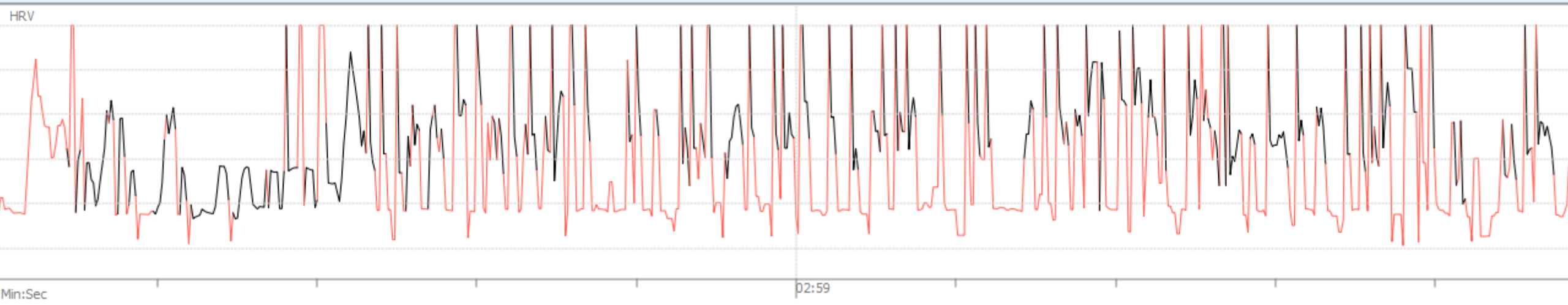
Prestasi dan Perubahan

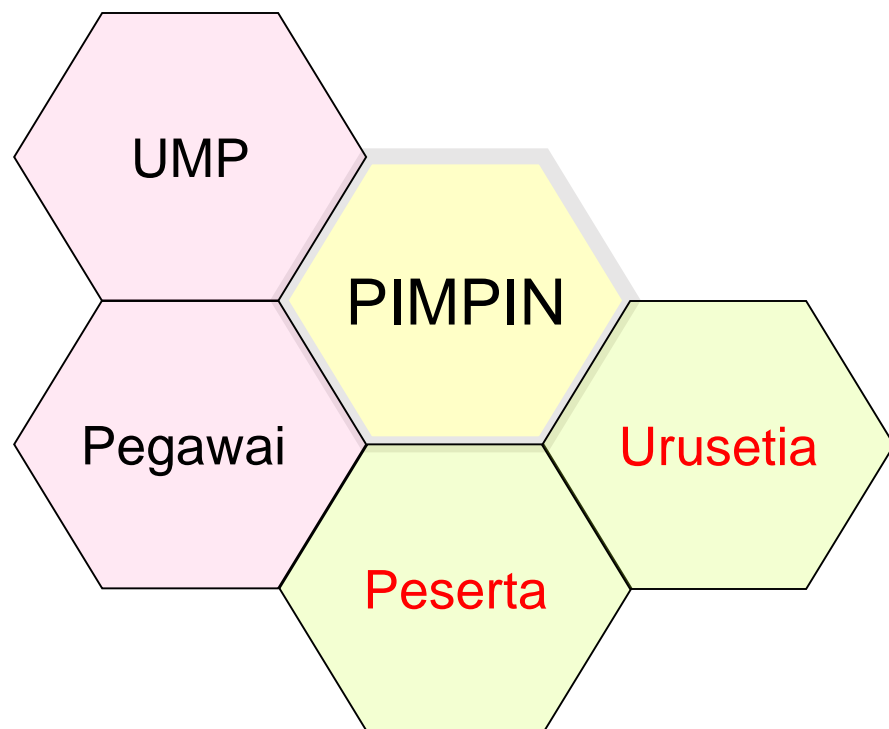


Challenge: Low









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