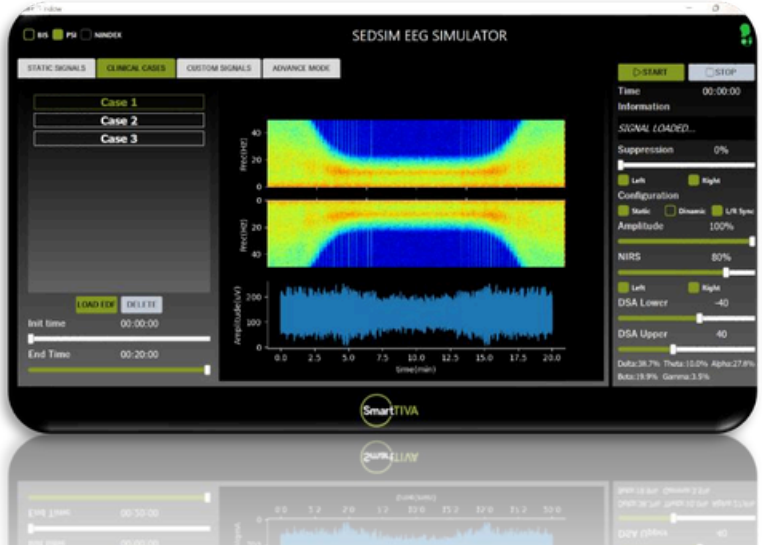
ARCOR
MEDICAL

SEDSIM®

The first true EEG Simulator for Anesthesia.



MODELS

Module

- Portable
- 4 channel EEG
- Connection to MOC4

Head

- Compatible with different brands
- Connection to sensor

HOW TO USE IT

ARCOR MEDICAL

SmartTIVA

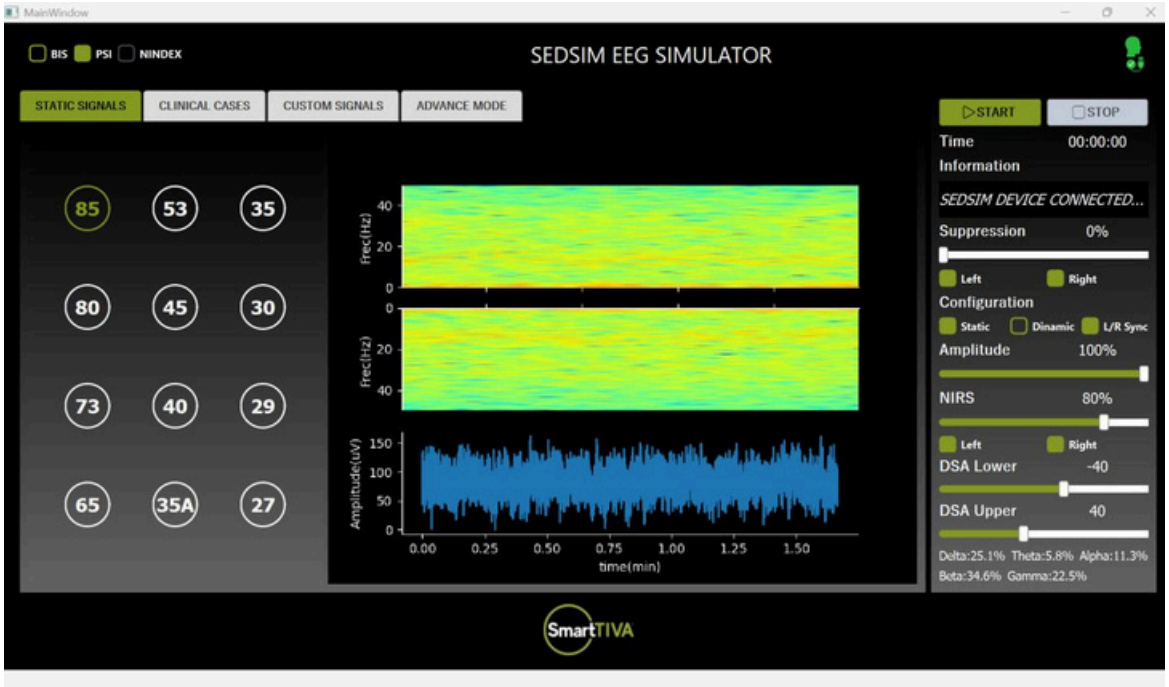
-OR-

Sedsim.exe

-OR-

ANDROID

STATIC SIGNALS



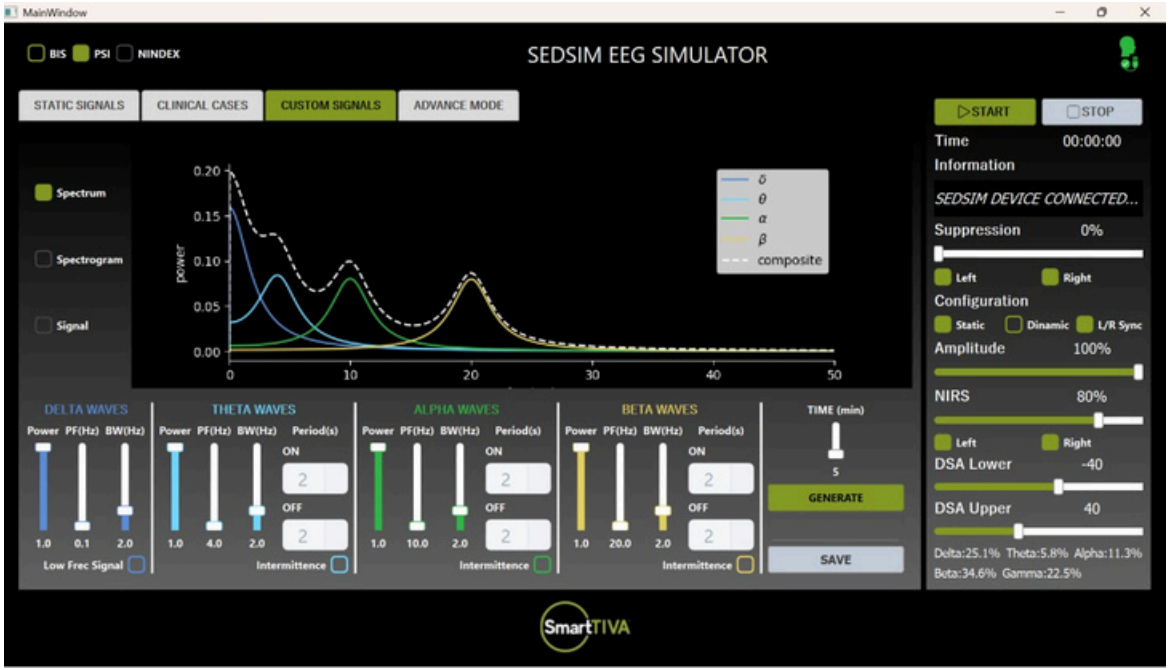
- EEG to generate stable BIS index
- Switch between different status
- Generate EEG bilateral or unilateral suppressions
- Simulate suppressions by low NIRS
- Change amplitude to simulate aged brains

STATIC SIGNALS

USE CASES

- **Latency Stress Test**: Rapidly switch EEG states (e.g., suppression to awake) to measure response delays in BIS, SEF, SR, and suppression time across different monitors.
- **Hidden Screen Workshop**: Let users make therapeutic decisions (e.g., induction bolus) without seeing the monitor, then reveal EEG and index trends to assess prediction accuracy.
- **Spectrogram Amplitude Drill**: Compare EEG signals of equal frequency but different amplitudes to show how aging or low-voltage brains affect spectral displays and BIS readings.
- **Unilateral vs Bilateral Suppression**: Simulate asymmetric suppression to highlight differences in monitor interpretation and relevance for localized cerebral injuries.
- **Cerebral Hypoxia Simulation**: Introduce suppression due to low cerebral oxygenation (not drug effect) to demonstrate how indices may not reflect true clinical cause.
- **Index Drift Demo**: Provide a constant EEG signal and observe how BIS, SR, and SEF fluctuate over time, exposing monitor noise, filtering, and stability limitations.

CUSTOM SIGNALS



- Create your own Delta, Theta, Alpha and Beta waves
- Customize your spectrogram
- Recreate different drug signatures
- Recreate spindles for intermittent states
- Recreateseizures

CUSTOM SIGNALS

USE CASES

- **Drug Specific EEG Signatures**: Simulate characteristic EEG patterns produced by common agents such as propofol, volatile anesthetics, ketamine, and dexmedetomidine to train recognition. **Index Sensitivity to Waveform Changes**: Explore how changes in specific EEG waveforms, including
- alpha, delta, and theta, affect BIS and related depth of anesthesia indices. **Alpha Dropout Variants**: Demonstrate different types of alpha wave loss such as progressive thinning, amplitude reduction,
- or abrupt disappearance. **Ketamine and Propofol Interaction**: Reproduce EEG changes seen after a ketamine bolus during continuous propofol infusion, including spectrum widening, enhanced beta
- activity, and altered alpha band patterns. **Dexmedetomidine EEG Patterns**: Simulate low dose dexmedetomidine effects featuring intermittent spindle-like alpha bursts followed by dominant delta activity to illustrate microstate transitions during sedation. **Seizure Pattern Simulation**:
- Introduce bursts of irregular mixed frequency activity mimicking seizure onset, followed by a return to normal EEG, to practice identifying abnormal events within anesthetic EEG recordings.

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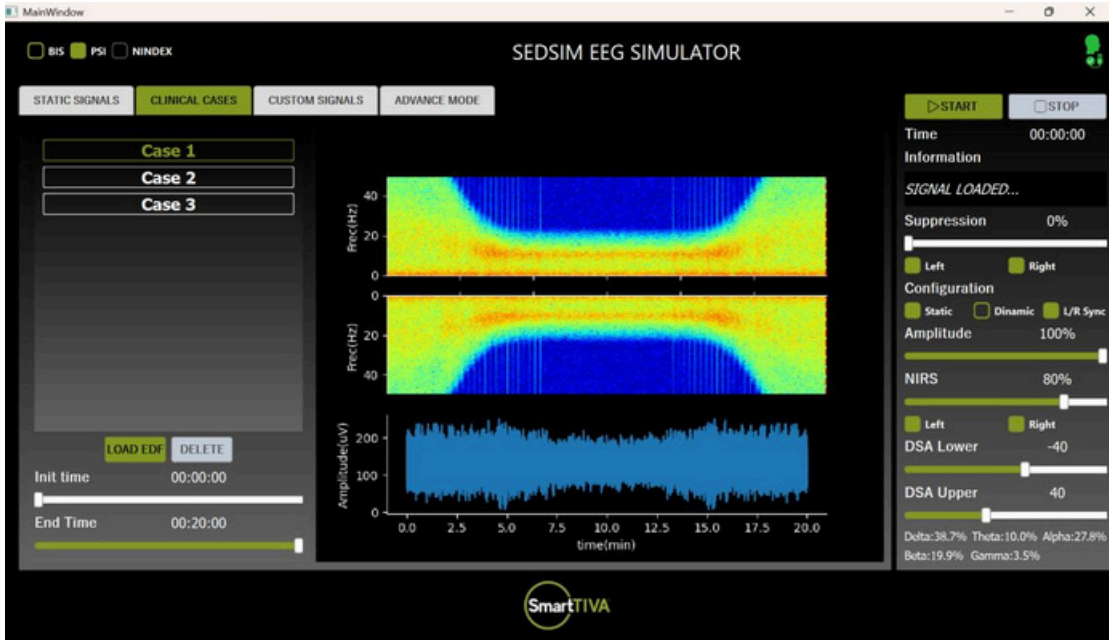
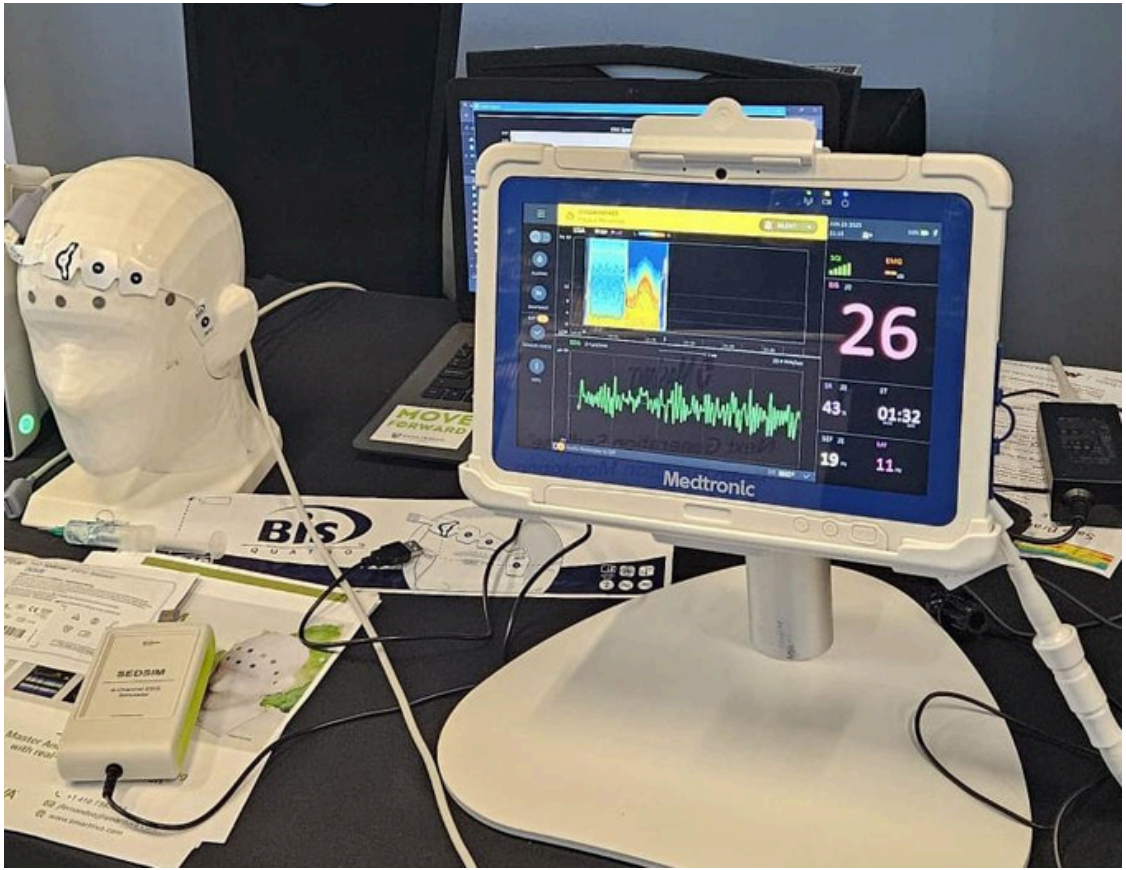
CLINICAL CASES



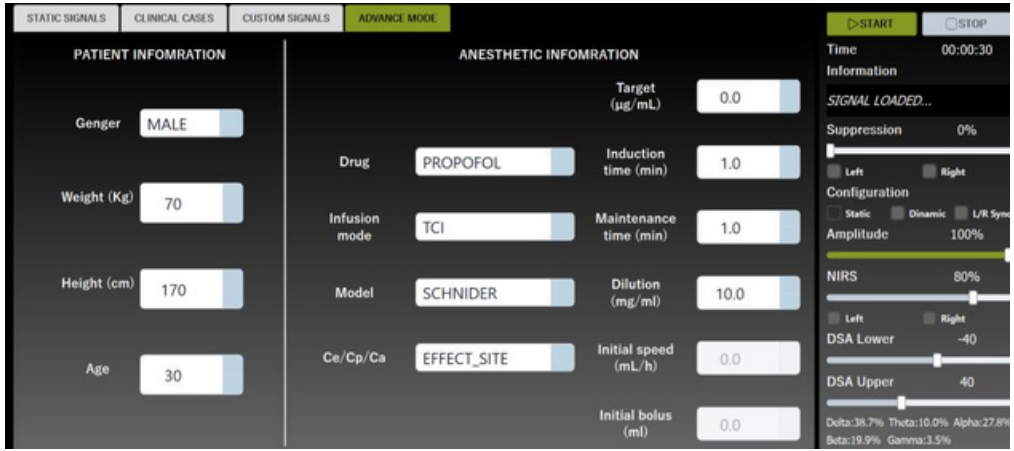
- Ideal for booths or unattended
- monitors on display
- 20 minute cases on repeat
- 3 representative cases:
  - •Typical TIVA anesthesia case
  - •Ketamine to Propofol transition
  - •Unilateral suppressions on left hemisphere from
- Load EDF case: Recreate a pre-recordedrealcasefromtheOR

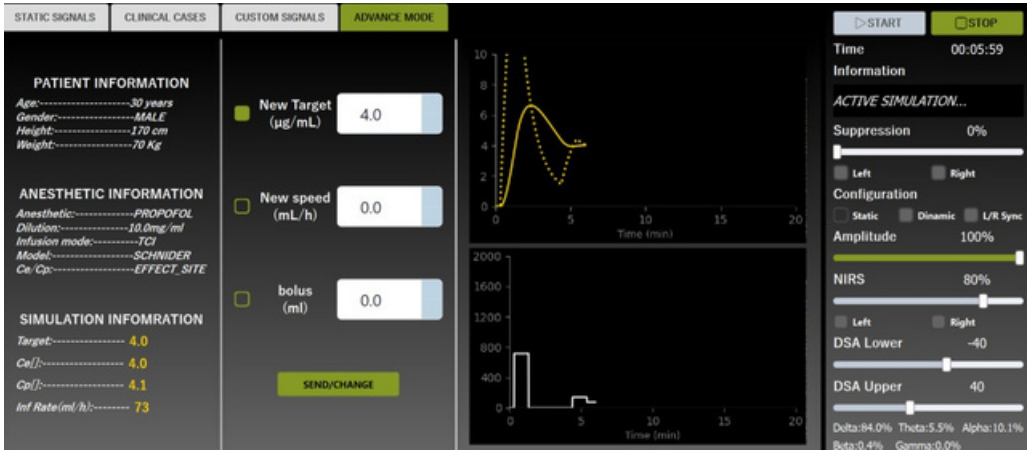
CLINICAL CASE 2

- Patient with Ketamine infusion
  - Delta and slight Beta waves
- Propofol bolus
  - Alphawaves appear
- 2nd Propofol bolus
  - Suppressions appear



ADVANCED MODE





- Simulate pharmacokinetics and their effects on EEG
- Effect site and plasma concentration simulation
- PK/PD models for propofol, volatile, dexmedetomidine and Ketamine

•Bolus, continuous infusion and TCI modelling for infusion modes

ADVANCED MODE

USE CASES

Compare Infusion Strategies in Real Time: Simulate the EEG response differences between bolus, manual infusion,and TCI-based administration for the samedrug,helpingclinicians visualize how delivery mode affects anesthetic depth and EEG dynamics. **Effect Site vs Plasma Lag Demonstration**: Show the temporal disconnect between plasma and effect-site concentrations for agents like propofol, using EEG to illustrate why immediate EEG changes do not always match dosing changes. **Personalized Dosing Scenarios**: Input patient-specific parameters (e.g., age, weight, sex) into PK models and observe differences in drug onset, peak, and EEG response. Use this to teach inter- patient variability and the rationale for closed-loop systems. **Overdose and Underdose Training**: Deliberately simulate excessive or insufficient dosing scenarios (e.g., overly rapid propofol TCI ramp) to show EEG suppression or inadequate anesthesia, training users to recognize red flags and correct dosing plans. **Emergence Timing and Planning**: Simulate different weaning strategies from TCI or volatile agents and compare EEG trajectories toward wakefulness, emphasizing how PK/PD models can guide smoother emergence without awareness or agitation.

VIDEO 1

ARCOR MEDICAL SmartTIVA

SEDSIM

4-channel EEG Simulator for Anesthesia.

VIDEO 2

ARCOR MEDICAL SmartTIVA

SEDSIM

4-channel EEG Simulator for Anesthesia.

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