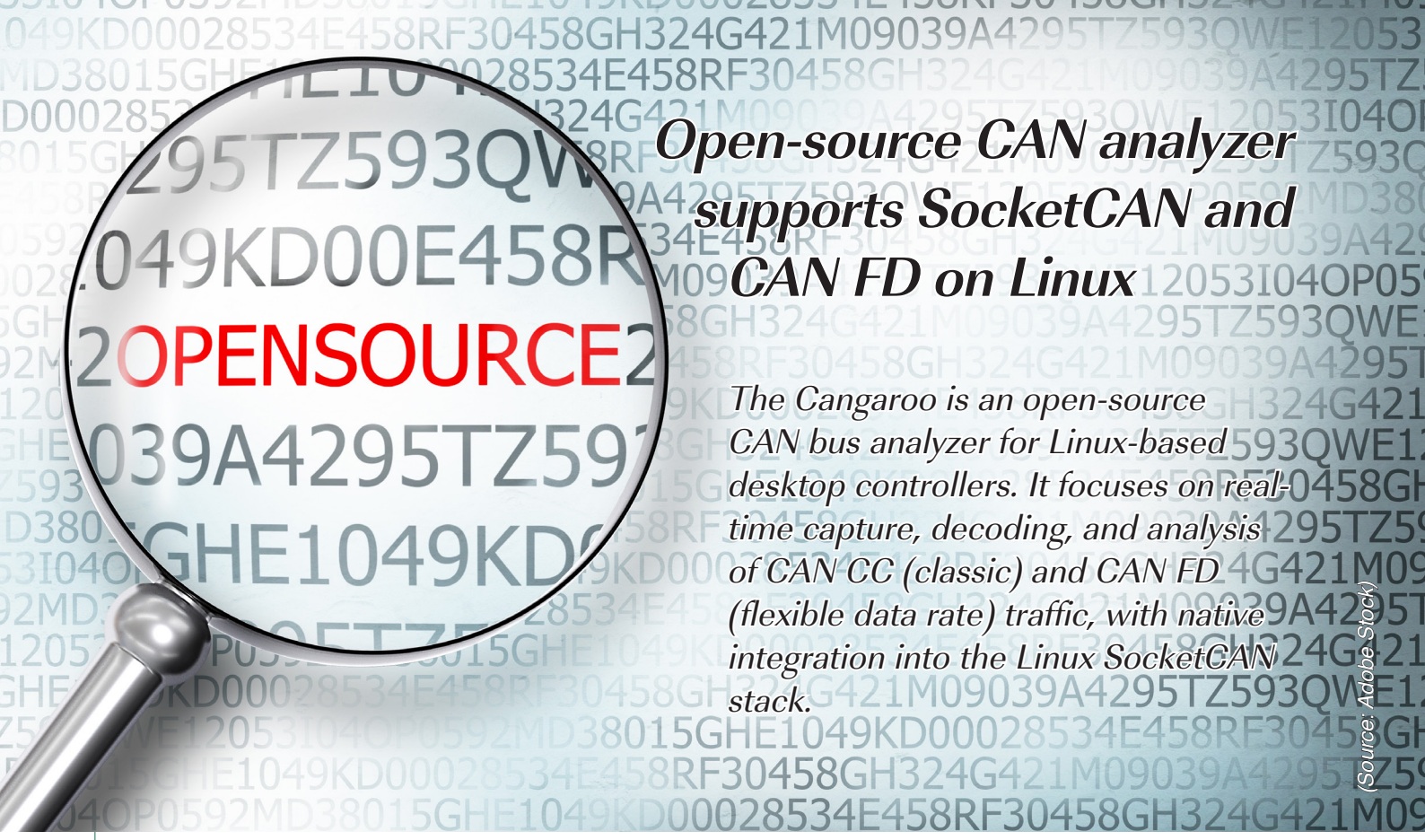

Open-source CAN analyzer supports SocketCAN and CAN FD on Linux

The Cangaroo is an open-source CAN bus analyzer for Linux-based desktop controllers. It focuses on real-time capture, decoding, and analysis of CAN CC (classic) and CAN FD (flexible data rate) traffic, with native integration into the Linux SocketCAN stack.

(Source: Adobe Stock)

The tool works with a wide range of interfaces supported by the kernel, including SocketCAN devices, CANable, and Candlelight adapters, and network-based tools such as CANblaster over UDP (User Datagram Protocol). This allows users to test with virtual CAN interfaces or connect directly to physical hardware without proprietary drivers.

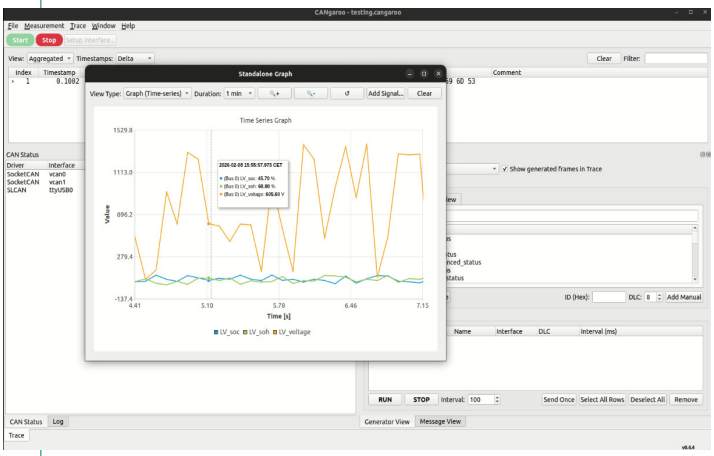

Figure 1: CAN parameters visualized in real-time (Source: Hubert Denkmair)

Cangaroo supports DBC (data base CAN) databases and can load multiple files at once to decode frames into human-readable parameters. Decoded data can be inspected in a trace view or visualized using time-series graphs, scatter plots, text views, and configurable gauges. These views are designed for live monitoring and interactive inspection, including zooming and timestamp-based analysis.

Higher-layer protocol support includes UDS over ISO-TP (standardized in the ISO 15765 series) with automatic reassembly of multi-frame diagnostic messages, as well as J1939 message decoding. J1939 features include PG identification and support for multi-segment BAM (broadcast announce message).

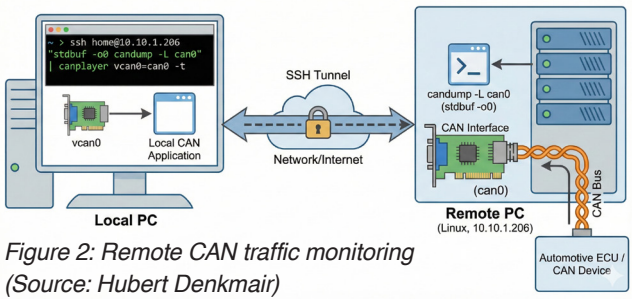

Figure 2: Remote CAN traffic monitoring (Source: Hubert Denkmair)

For development and testing, Cangaroo can simulate CAN traffic using manual or periodic transmissions. Generated frames can be looped back into the trace view, making it possible to observe both transmitted and received traffic in a single workspace. The application also supports advanced filtering and logging for offline analysis.

Installation is available either by building from source using a provided Linux setup script or by installing a pre-compiled release package. Dependencies are based on Qt 6 and standard Linux networking libraries, with packages available for major distributions including Ubuntu, Fedora, and Arch Linux.

The Cangaroo project was originally written by Hubert Denkmair, who developed the initial open-source CAN bus analyzer and published it on GitHub. Ongoing development is now carried out by OpenAutoDiagLabs, which maintains a fork of the original repository and continues to expand the tool with new protocol support, visualization features, and regular Linux releases. *hz*