



TraffiClair Monthly Updates

2026.06: ClairWav Radar Use Cases

TraffiClair Team

CONTENTS

1. ClairWav Radar Family: One Platform, Four Scenarios – Smarter, Safer Infrastructure
2. Radar-Powered Smart Traffic: Breaking the Gridlock at Chongqing's Banan Interchange
3. ClairWav Microwave Radar for Train Station Traffic Optimization-Suzhou
4. Dynamic Green Wave Traffic Control in Yuncheng County
5. ClairWav Radar Safeguards All-Weather Smart Mobility on the G15 Shenyang-Haikou Expressway
6. ClairWav Camera-integrated Radars Improves Traffic Efficiency on Nansha Bridge

ClairWav Radar Family: One Platform, Four Scenarios – Smarter, Safer Infrastructure



City Intersections

ClairWav-T24/T80 enables all-weather operation with a 10-year lifespan, covering up to 12 lanes and 700 meters. Scanning 10-20 times per second, it provides over 90% accuracy in traffic volume, speed, and classification – empowering adaptive signal control and rapid incident detection.



Highway

Using advanced phased-array technology, the T24/T80 achieves second-level incident detection with near-zero misses, capturing wrong-way driving, debris, and more at 95% accuracy – even in blizzards and dense fog – ensuring all-weather smart mobility.



Tunnel

ClairWav-U24 leverages MIMO and adaptive beamforming to track up to 128 targets simultaneously, overcoming signal loss and multipath interference with a wide field of view and rugged durability for harsh environments.

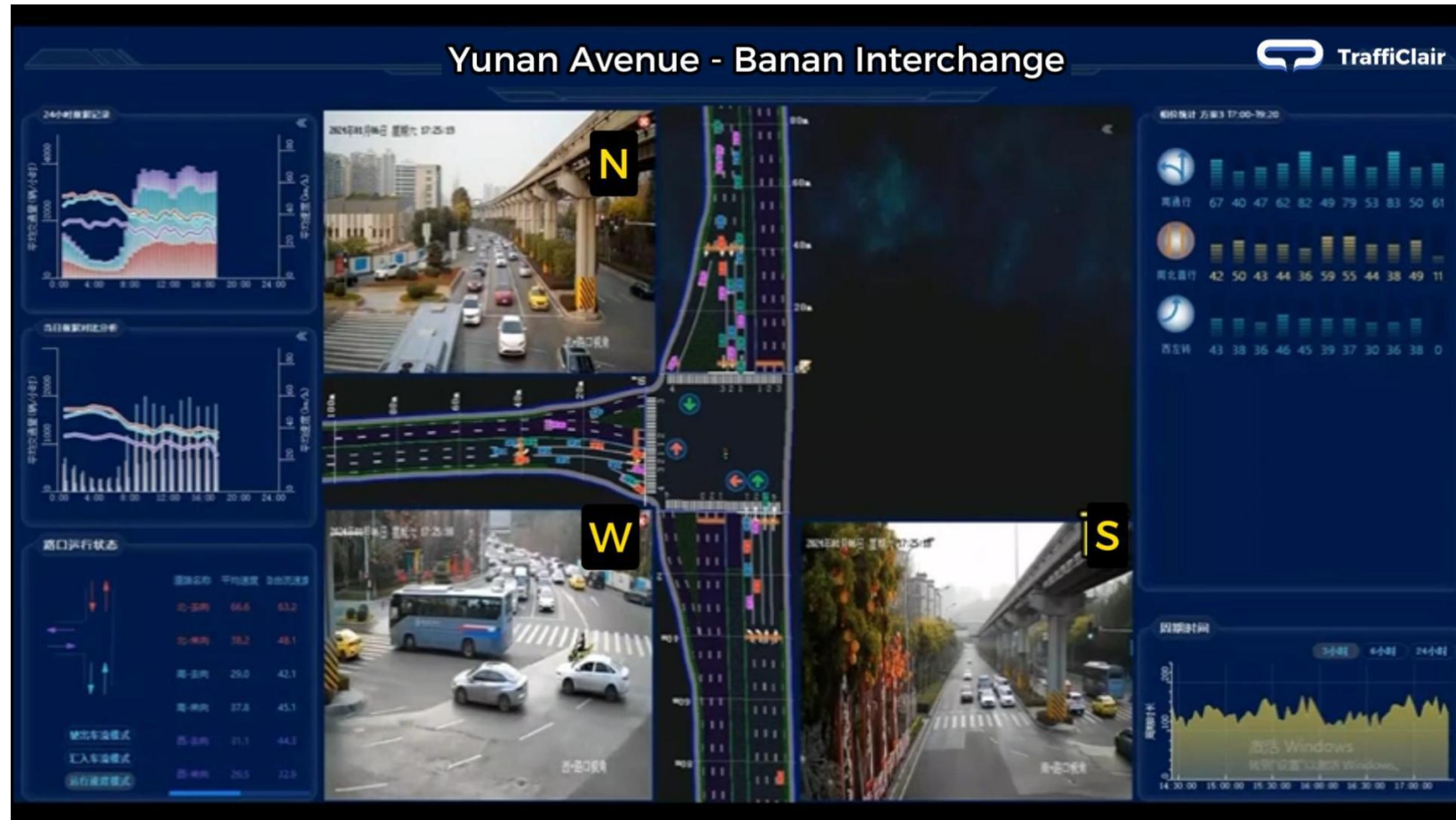


Slope Stability & Bridge Health

ClairWav-MD10 and SD1K deliver millimeter-precision slope and dam monitoring, while ClairWav-BH10 enables bridge structural health assessment – proven in real-world deployments like the Yan'an project.

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Radar-Powered Smart Traffic: Breaking the Gridlock at Chongqing's Banan Interchange



At Chongqing's Banan Interchange—a critical highway-urban gateway plagued by 11-hour peak delays—we deployed ClairWav, a millimeter-wave radar system with edge computing, to monitor traffic in real time and automatically adjust signals. **The result: daily congestion cut by ~4 hours, peak delay reduced by 61%, and highway spillback prevented.** This radar-based “Highway-Synergy” model proves that smart sensing and real-time response can turn gridlocked bottlenecks into smooth commutes—and it’s replicable nationwide.

[Full Story](#)
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ClairWav Microwave Radar for Train Station Traffic Optimization-Suzhou



Results:

- 114 minutes (1hr 54min) reduction in weekend congestion.
- Main arterial flow stabilized; reverse overflow eliminated.

At a major Suzhou train station adjacent to a busy urban arterial, fixed-time signals failed to handle unpredictable passenger-vehicle surges, causing oversaturation and reverse overflow. We deployed ClairWav microwave radar detectors—offering real-time, multi-lane detection up to 350m—to enable dynamic, second-by-second signal adjustments and proactive queue management. **The result: weekend congestion dropped from 322 to 208 minutes (a 114-minute reduction), main arterial flow stabilized, and overflow was eliminated.** Reliable in all weather, this radar-based solution proves that intelligent sensing can turn chaotic transport hubs into smooth, predictable corridors.

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Dynamic Green Wave Traffic Control in Yuncheng County



Results:

- **Traffic Efficiency Improvement:** 40%+ increase in overall intersection throughput.
- **Peak-Hour Congestion Duration Reduction:** 78.9% decrease in congestion duration during peak periods, representing a substantial improvement in travel reliability for residents.

Facing severe peak-hour congestion from mixed old/new urban districts, Yuncheng County deployed an intelligent signal system across 64 intersections, powered by ClairWav microwave radars (700m range, real-time detection of volume, speed, and queues). A dynamic green-wave network plus adaptive signal control adjusts timing based on actual demand. **Results:** throughput rose 40%+, peak congestion dropped 78.9%. Radar-based, data-driven control proves effective for complex urban traffic.

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ClairWav Radar Safeguards All-Weather Smart Mobility on the G15 Shenyang-Haikou Expressway



On the G15 Shenhai Expressway—a critical eastern coastal corridor—frequent rain, snow, and fog in the Yancheng section posed serious safety risks. **TraffiClair deployed its all-scenario intelligent perception system, using advanced phased-array radar to deliver second-level incident detection with 95% accuracy—capturing abnormal stops, wrong-way driving, and debris in real time.** During a pre-Spring Festival blizzard, the radar maintained stable operation despite heavy snow and low visibility, precisely tracking vehicles and enabling rapid emergency rerouting. Proven all-weather reliability and real-time alerts make TraffiClair a trusted backbone for expressway digital transformation.

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ClairWav Camera-integrated Radars Improves Traffic Efficiency on Nansha Bridge



On the Nansha Bridge—a key Greater Bay Area corridor—TraffiClair deployed a camera-integrated radar system combining millimeter-wave radar and HD video for all-weather, 24/7 monitoring.

Results: traffic capacity rose 16.8%, peak travel time dropped from 30+ minutes to ~10 minutes, and holiday surges were managed smoothly—even in rain, fog, and high humidity. This radar-vision fusion proves that advanced sensing unlocks hidden capacity and delivers smarter decisions on critical infrastructure.

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Thanks

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