

BusIQ — Executive Summary

Real-time Operations Intelligence for Dublin Bus

The Problem

Dublin Bus moves **159 million passengers per year** across 414 routes. The network generates terabytes of real-time GTFS data — but control rooms consume this data as raw numbers on screens. Between *seeing a problem* and *fixing it* lies a cognitive gap that costs Dublin Bus millions in eroded passenger trust.

Our prototype, running against live NTA data right now, proves this gap is real:

Metric	Live Value	What It Means
On-time rate	~50%	Half of all buses are 5+ min off schedule at any moment
Ghost buses	125+ signal-lost (~10% of fleet)	Passengers wait for buses that won't come
Bunching	230+ pairs on 75+ routes	Two buses arrive together, then a 20-min gap
Network Health	Grade C (69/100)	Systemic headway irregularity
Avg delay (worst routes)	28-39 min	Routes 40, 55, 190 consistently failing

These are not projections. These are measurements from a working system processing **1,300+ live vehicles** right now.

The Solution: BusIQ

BusIQ is not a dashboard. It is a **decision engine** — an intelligent operations layer that converts real-time data into specific, actionable interventions.

What it does in 3 steps:

- 1. DETECT** — Ingests live GTFS-RT data every 15 seconds from all 3 Dublin operators. Automatically identifies bunching, ghost buses, overcrowding, and delay cascades.
- 2. DECIDE** — Generates specific interventions: "*HOLD bus #2129 at Clonkeen Road for 180 seconds to restore 10-minute E1 headway.*" Each intervention includes the action, target stop, hold time, and estimated passenger impact.
- 3. DELIVER** — One-click approval in the Command Console. Before/after tracking proves the intervention worked. Passengers can see their crowd reports triggering responses.

Why We Win

Criterion	Our Position

Measurable value	20+ live interventions per snapshot. Reduces controller decision time from ~5 min to <30 sec
Technology Readiness	TRL 6 — working prototype with live data, not a slide deck
Cost efficiency	€0 cash request. Built on open data + free-tier infrastructure
Challenge alignment	Covers ALL 4 pillars: Data & Viz, Optimisation, Collaboration, Smart Cities
Integration feasibility	Uses existing NTA infrastructure. No hardware. No new data sources needed

What We Need from Dublin Bus

Request	Purpose
Internal scheduling data	Improve ghost detection accuracy beyond public GTFS
2-3 control room sessions	Validate intervention logic with real operators
One depot pilot (4 weeks)	Test DEPLOY interventions with standby roster
Monthly check-ins	Progress alignment and feedback loop

6-Month Roadmap

Month	Deliverable
1	Control room integration. Validate intervention logic with supervisors
2	Pilot HOLD interventions on 3 high-bunching routes. Measure headway improvement
3	Add DEPLOY interventions. Connect to depot rostering
4	Launch passenger crowd reporting (500 users, 5 routes)
5	Full network rollout of all intervention types
6	Evaluation report with measured outcomes. Decision on permanent integration

The Bottom Line

Dublin Bus has the data. BusIQ provides the intelligence. We're asking for **access and time** — not money — to prove that real-time intervention can measurably improve service for 159 million annual passengers.

The prototype is live. The evidence is real. The ask is zero cash.

BusIQ — Dublin Bus Innovation Challenge 2026 Contact: [Your Name] | [Your Email] Live Demo: [URL]