

ICP-AGIR Best Practice for Taichung (Taiwan)

AI technologies to improve air quality	
	CITY Taichung City
Departments / Institutions involved	Environment Protection Bureau
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Description of the best practice	Applying AI technologies as an air pollution control strategy to improve air quality
Theme and sub-theme if appropriate	Air quality - Strategies for Improving Air Quality in Taichung City- Applying AI Technologies to Air Pollution Control

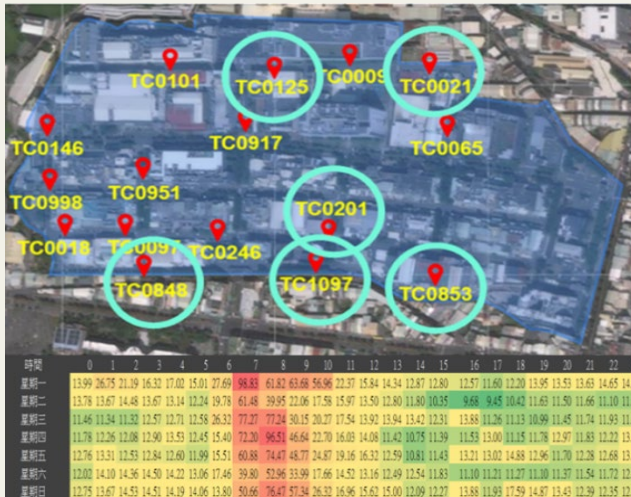
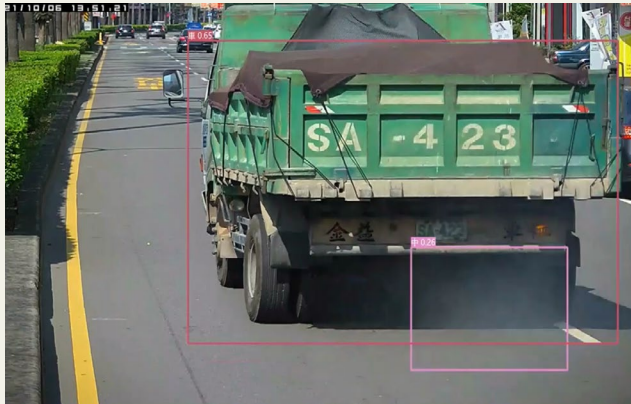
Description of Best practice - Strategies for Improving Air Quality in Taichung City- Applying AI Technologies to Air Pollution Control	
Challenge Addressed	<p>Because Taichung City is located in the central part of Taiwan, with the Central Mountain Range in the East. Therefore, when the east wind blows in the autumn and winter, due to Taichung City located on the leeward side, leeside eddies are produced and dispersion is weak, it is difficult to disseminate local pollutions, resulting in poor air quality.</p> <p>Meanwhile, the environmental load of Taichung City has shown a continuous upward trend in the past 10 years. Currently, over 19 thousand factories and 2.9 million vehicles are registered in Taichung city, and these numbers are continues increasing.</p>
Solution Implemented	Improving air quality is one of the most important administrative goals of Taichung City. Therefore the team of air pollution controlling in EPB is committed to introduce smart

	<p>technologies to address the air pollution control strategies and implement them accordingly to improve air quality, which including but not only "Monitoring Factory Emissions in Taichung City by Building a Cloud Central Monitoring System", "Air Quality Micro-sensors", "Real-time Surveillance of Construction Sites", "Smart Detection of "Cuttlefish" in Traffic-Black Fume Emitting Vehicles", "The Nation's First Smoke Detection System for Automobile (Diesel)", and "Smart Water Line for River Dust".</p> <ol style="list-style-type: none"> 1. <input type="checkbox"/> Smart Detection of "Cuttlefish" in Traffic-Black Fume Emitting Vehicles <input type="checkbox"/> as known as <input type="checkbox"/> Application of AI Recognition System To Detect Highly Polluting Scooters <input type="checkbox"/> 2. <input type="checkbox"/> Air Quality Micro-sensors <input type="checkbox"/> as known as <input type="checkbox"/> Taichung City Air Quality Internet of Things Development, Operation and Maintenance Project <input type="checkbox"/>
Partnerships	Grateful thanks to EPB colleagues, the assisting companies, and the commissioned manufacturers of the Taichung City Government.
Lessons Learned	The improvement of air pollution cannot be achieved overnight. Systematic implementation can make air pollution prevention and control more convenient and simple. The process of developing the system is by no means simple. It takes a lot of time for coordination and team learning to make the system more perfect.
Main Milestones	<p>"Monitoring Factory Emissions in Taichung City by Building a Cloud Central Monitoring System" received innovation application award 2021 at smart government category and was personally awarded by President Tsai Ing-wen., which is the only public entity receive the award in that year's environmental protection category.</p> <p>"Air Quality Micro-sensors" and "Smart Detection of "Cuttlefish" in Traffic-Black Fume Emitting Vehicles" both received 5th Annual Smart 50 Awards.</p>

Materials for promotion	
Quote from city representative	<p>In 2022, the PM2.5 air pollution in Taichung City was 12.7 micrograms. We will not be satisfied with this, and the air quality will continue to improve, hoping to target the US standard value of 12 micrograms</p> <p>Smart 50 Awards is an international competition award. Taichung is the only award-winning city in Taiwan and the only award-winning city in East Asia.</p>

Materials for promotion

Graphic Material



Online links

<https://www.youtube.com/watch?v=5XZlevjwFgM>