Corrigendum to Dr LIU Ye 's PhD Thesis

These corrections do not affect the overall conclusions of the study. The following corrections are made:

Chapter 1

1. Page 2, first paragraph

The original text cited *EUROCONTROL Central Office for Delay Analysis 2023a, 2023b* and *Federal Aviation Administration 2023*.

The in-text citations should be replaced with *EUROCONTROL, 2023* and *Federal Aviation Administration, 2025*:

"… According to Eurocontrol's Central Office for Delay Analysis (CODA) Digest, the average delay per flight in Europe in 2022 reached 17.3 minutes … (EUROCONTROL, 2023). Reactionary delays … (EUROCONTROL, 2023). In the United States, the Federal Aviation Administration (FAA) reports that between June 2017 and May 2023, meteorological conditions accounted for 74.26% of all system-impacting delays exceeding 15 minutes (Federal Aviation Administration, 2025). …"

References:
EUROCONTROL (2023). All-causes delays to air transport in Europe - Annual 2022: CODA digest. Technical report, EUROCONTROL.
Federal Aviation Administration (2025). FAQ: Weather delay. Available at https://www.faa.gov/nextgen/programs/weather/faq.

2. Page 3, first paragraph

The original citations *Harrison, 2006b; Luckenbaugh and O'Donnell, 2007; Sipe and Viken, 2009* and the reference to *International Civil Aviation Organization 2018* should be revised.

The sentences should be replaced with:

"… the Single European Sky ATM Research (SESAR) programme in Europe, and China's Next Generation Air Traffic Management initiative (Harrison, 2006; Luckenbaugh et al., 2007; Sipe and Moore, 2009). … concluding that it can enhance predictability, flexibility, and resilience while improving overall airspace utilisation (International Civil Aviation Organization, 2005; International Civil Aviation Organization, 2018)."

References:
Harrison, M. J. (2006). ADS-X the next gen approach for the next generation air transportation system. In *2006 ieee/aiaa 25TH Digital Avionics Systems Conference*, pages 1–8.
Luckenbaugh, G., Landriau, S., Dehn, J., and Rudolph, S. (2007). Service oriented architecture for the next generation air transportation system. In *2007 Integrated Communications, Navigation and Surveillance Conference*, pages 1–9, Herndon, VA, USA.
Sipe, A. and Moore, J. (2009). Air traffic functions in the NextGen and SESAR airspace. In *2009 IEEE/AIAA 28th Digital Avionics Systems Conference*, pages 2.A.6–1–2.A.6–7, Orlando, FL, USA.

International Civil Aviation Organization (2018). Global TBO Concept, Version 0.11. Available at https://www2023.icao.int/airnavigation/tbo/Pages/Why-Global-TBO-Concept.aspx.

International Civil Aviation Organization (2005). Global Air Traffic Management Operational Concept - First Edition Doc 9854. Available at https://www2023.icao.int/Meetings/anconf12/Document%20Archive/9854_cons_en%5B1%5D.pdf.

Chapter 2

1. Page 10, first paragraph

The original citation *Lopez-Leones et al., 2007* should be *López-Leonés et al., 2007*.

References:
López-Leonés, J., Vilaplana, M. A., Gallo, E., Navarro, F. A., and Querejeta, C. (2007). The aircraft intent description language: A key enabler for air-ground synchronization in trajectory-based operations. In 2*007 IEEE/AIAA 26th Digital Avionics Systems Conference*, pages 1.D.4–1–1.D.4–12, Dallas, TX, USA.

Chapter 3

1. Page 30, first paragraph

The original citation *(?Wang et al., 2018; Ng et al., 2022)* is incomplete.

The full sentence should be:
"Besides that, flight trajectory identification and categorisation can be taken as a data processing step to enhance the performance of trajectory prediction in the decision-making (Gallego et al.,2018; Wang et al., 2018; Ng et al., 2022)."

References:
Gallego, C. E. V., Comendador, V. F. G., Nieto, F. J. S., Imaz, G. O., & Valdés, R. M. A. (2018). Analysis of air traffic control operational impact on aircraft vertical profiles supported by machine learning. *Transportation research part C: emerging technologies*, 95, 883-903.

Chapter 4

1. Page 66, second paragraph

The original citations *Harrison, 2006a; Luckenbaugh and O'Donnell, 2007; Sipe and Viken, 2009* should be revised.

The full sentence should be:
"TBO is being implemented through several programs, including the Next Generation Air Transportation System (NextGen), the Single European Sky ATM Research, and China's Next Generation Air Traffic Management (Harrison, 2006; Luckenbaugh et al., 2007; Sipe and Moore, 2009), which collaborative decision-making among different stakeholders."

References:

Harrison, M. J. (2006). ADS-X the next gen approach for the next generation air transportation system. In *2006 ieee/aiaa 25TH Digital Avionics Systems Conference*, pages 1–8.

Luckenbaugh, G., Landriau, S., Dehn, J., and Rudolph, S. (2007). Service oriented architecture for the next generation air transportation system. In *2007 Integrated Communications, Navigation and Surveillance Conference*, pages 1–9, Herndon, VA, USA.

Sipe, A. and Moore, J. (2009). Air traffic functions in the NextGen and SESAR airspace. In *2009 IEEE/AIAA 28th Digital Avionics Systems Conference*, pages 2.A.6–1–2.A.6–7, Orlando, FL, USA.

2. Page 80, second paragraph

The reference *Arvanitis et al., 2019* should be 2018. The sentence should be:

"… we utilised several image processing techniques, including RGB image binarisation, BF image denoising (Arvanitis et al., 2018; Elad, 2002; Hashimoto et al., 2018), image contour recognition and KNN."

References:

Arvanitis, G., Lalos, A. S., Moustakas, K., and Fakotakis, N. (2018). Feature preserving mesh denoising based on graph spectral processing. *IEEE transactions on visualization and computer graphics*, 25(3):1513–1527.

Chapter 5

1. Page 112, second paragraph

The original citation *(FAA, 2010)* is incomplete. It should be replaced with:

"… weather accounts for approximately 74% of delays from June 2017 to May 2023 (Federal Aviation Administration, 2025; FAA, 2010)."

References:

Federal Aviation Administration (2025). FAQ: Weather delay. Available at https://www.faa.gov/nextgen/programs/weather/faq.

References

Some references are incomplete. They should be replaced with:

Zhu, G., Matthews, C., Wei, P., Lorch, M., and Chakravarty, S. (2018). En route flight time prediction under convective weather events. In *2018 Aviation Technology, Integration, and Operations Conference*, page 3670.

Sankararaman, S. and Daigle, M. (2017). Uncertainty quantification in trajectory prediction for aircraft operations. In *AIAA Guidance, Navigation, and Control Conference*, page 1724, Grapevine, Texas, USA.

Liu, Y., Hansen, M., Lovell, D. J., and Ball, M. O. (2018). Predicting aircraft trajectory choice–a nominal route approach. In *Proc. of the International Conference for Research in Air Transportation*, pages 1–8.