



# Determination of tonne-kilometre data from aviation activities

## Annex XV – Tonne-Kilometre Data



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## Annex XV MRG

### Introduction

Activity specific guidelines for determination of tonne-kilometre data from aviation activities

Purpose:

- Application for free allowances under Articles 3e (and 3f) of Directive 2003/87/EC
- Calculating the Benchmark for allocating allowances

**All Operators performing Annex I activities in 2010 can apply for free allowances under Article 3e of the Directive.**

## Methodologies for Calculating Tonne-Kilometre Data

### Section 4 Annex XV MRG

**tonne-kilometres (t km) = distance (km) \* payload (t)**

## Distance (Section 4 Annex XV MRG)

### Definition and calculation

‘**Distance**’ means the great circle distance between the aerodrome of departure and the aerodrome of arrival plus 95km

‘**Great circle distance**’ means the shortest distance between any two points on the surface of the Earth

The ‘**surface**’ of the earth is defined by the reference spheroid of the WGS 84 System (same as GPS/NAVSTAR reference)



## Aerodrome Location Data (Section 4.2 Annex XV MRG)

### Source and calculation of distance

The aerodrome reference points shall be taken from AIP Data, or a source which is in compliance with Annex 15 of the Chicago Convention

Calculation of distances should be done by a system using the WGS 84 model

EUROCONTROL plans to provide a GCD-Calculator for cross checks



## Payload I (Section 4.3 Annex XV MRG)

### What is counted as Payload?

**‘Passengers and checked baggage’**  
(excluding crew Members)

**‘Freight and mail’**

### What is *not* counted as Payload?

Containers and pallets

Service weight like catering and water



## Payload II (Section 4.3 Annex XV MRG)

### Mass of passengers and checked baggage

Tier 1: A default value of 100kg for each passenger and their checked baggage is used

Tier 2 : The mass for passengers and checked baggage contained in the mass and balance documentation is used

**Free Choice between Tier 1 and Tier 2 but the chosen tier shall be applied for *all flights!***

## What happens if an AO doesn't know the actual payload?

**I only sell total number of seats, don't know the number of passengers.**

You should note in future, if you want free allowances. You may use the number of passengers used for mass and balance calculation.

**We do not store mass and balance documentation.**

You should do in future, as you need to prove this data to the verifier and CA **for 10 years**. Different to the determination of emissions there is no possibility to estimate payload. If you are not able to prove, you can't get allowances.

**No free allocation without actual identified and verified payload!**

## Uncertainty Assessment

### Section 5 Annex XV MRG 2009

Aircraft operator shall have an understanding of the main sources of uncertainty

Key risks have to be identified in the monitoring plan

Control activities and corrective actions corresponding with section 10.2 and 10.3 Annex I MRG 2009 have to be defined

**A detailed uncertainty assessment is not required.**

