INDICATOR FORM
(Guidance on completing the form is included on page 2)

PART A: INDICATOR IDENTIFICATION

1. INDICATOR

Indicator 1.303: IFR-IFR Loss of Separation (IFR-IFR LOS)

2. DESCRIPTION

Number of loss of separations between IFR flights.

3. ICAO STRATEGIC OBJECTIVE

☒ Safety ☐ Capacity ☐ Efficiency ☐ Security ☐ Environment

PART B: INDICATOR SPECIFICATIONS

4. GASP OR GANP ELEMENT

GASP

5. PROJECT OR PROGRAMME

Safety management

6. INDICATOR TYPE

The indicator is: ☐ activity-related (predictive or leading) OR ☒ outcome-related (reactive or lagging)

7. RATIONALE

A primary responsibility of an ANSP is to provide separation between IFR aircraft. As such, IFR-IFR losses of separation (IFR-IFR LOS) are one of the most critical safety issues under analysis on a global scale.

8. LIMITATIONS

Reporting methods (automatic or manual) and the way they are utilized are different across ANSPs.
Attribution of IFR-IFR LOS to ATM Ground versus ATM Airborne is not consistent.

9. DEFINITION OF TECHNICAL OR SPECIFIC TERMS

An IFR-IFR LOS is:

- the two involved aircraft were both IFR;
- the two involved aircraft were both airborne;
- a separation standard was applicable and your ANSP was responsible for applying it;
- the separation standard was not fully obtained/maintained; and
- the ANSP acknowledges full or partial ownership of the reason why separation application failed.

Note: a loss of wake turbulence separation between two IFR aircraft constitutes a loss of separation.

Achieved Separation: the highest value between the % vertical (Obtained Vertical Separation divided by the Required Vertical Separation) and the % horizontal separation (Obtained Horizontal Separation divided by the Required Horizontal Separation).
Obtained Vertical Separation: The actual vertical separation maintained between the IFR aircraft in the air during an IFR-IFR Loss of Separation.
Required Vertical Separation: The required minimum vertical separation as specified by your ANSP for the specific airspace where the IFR-IFR Loss of Separation took place.
Obtained Horizontal Separation: The actual horizontal separation maintained between the IFR aircraft in the air during an IFR-IFR Loss of Separation.
Required Horizontal Separation: The required minimum horizontal separation as specified by your ANSP for the specific airspace where the IFR-IFR Loss of Separation took place.
IFR: Instrument flight rules (IFR) is one of two sets of regulations governing all aspects of civil aviation aircraft operations; the other is visual flight rules (VFR).
IFR Flights: The number of IFR flights controlled by an ANSP including military, training, business, etc. For the purposes of this definition, "airspace" refers to the airspace in which the ANSP is providing service. The following scenarios count as one flight:

- IFR aircraft departs and arrives within your airspace (domestic flight);
- IFR aircraft originates from your airspace and flies out of your airspace;
- IFR aircraft flies into your airspace and lands;
- IFR aircraft flies into your airspace and flies out of your airspace (overflight).

Note: If an IFR aircraft exits the airspace in which the ANSP is providing service and then proceeds to re-enter the airspace, it would be counted as a new flight.

IFR Flight Hours: The sum of the flight hours flown by an aircraft operating under IFR in an ANSP's control, domestic and oceanic, as applicable.

10. CALCULATION METHOD/FORMULA

The following are the metrics used within this indicator:

- Number of IFR-IFR LOS;
- IFR-IFR LOS rate (number of occurrences per 100,000 IFR flights);
- IFR-IFR LOS rate (number of occurrences per 1 million IFR flight hours);
- IFR-IFR LOS (less than 2/3 of achieved separation) rate (number of occurrences with less than 2/3 of achieved separation per 100,000 IFR flights);
- IFR-IFR LOS (less than 2/3 of achieved separation) Rate (number of occurrences with less than 2/3 of achieved separation per 1 million IFR flight hours);
- Segregate the number of occurrences by RAT/RAP severity rating (measure as distribution counts and rates as per above):
  - RAPA/RAT4;
  - RAPB/RAT3;
  - RAPC/RAT2;
  - RAPE/RAT1;
  - RAPD.

Note: more information available through https://www.skybrary.aero/index.php/Risk_Analysis_Tool_(RAT).

- Segregate the number of occurrences by RAT/RAP risk rating (measure as distribution counts and rates as per above):
  - Low – RAP(RAT): E1(1/5), E2(1/4), E3(1/3), E4(1/2), E5(1/1), C5(2/1), B5(3/1);
  - Medium – RAP(RAT): C1(2/5), C2(2/4), C3(2/3), C4(2/2), B3(3/3), B4(3/2), A4(4/2), A5(4/1);
  - High – RAP(RAT): B1*3/5), B2(3/4), A1(4/5), A2(4/4), A3(4/3).
- Segregate the number of occurrences by safety barrier (measure as distribution counts and rates as per above):
  - Green: ANS safety barrier – ATC initiated action that mitigated the loss of separation;
  - Yellow: pilot/aircraft safety barrier – the pilot initiated action that mitigated the loss of separation;
  - Red: no system safety barrier – neither ATC nor pilot initiated action that mitigated the loss of separation.

PART C: DATA

11. DATA SET(S)	12. AVAILABILITY	13. DISAGGREGATION LEVEL	14. PROVIDER	15. CUSTODIAN
Occurrence reports	5	ANSP	ANSP	CANSO
IFR flight hours	3	ANSP	ANSP	CANSO
IFR flights	4	ANSP	ANSP	CANSO
RAT/RAP	2	ANSP	ANSP	CANSO

FOR USE BY THE INTEGRATED AVIATION ANALYSIS (IAA) SECTION

INDICATOR NUMBER	TIER CLASSIFICATION
1.303	I

GUIDANCE ON COMPLETING THE FORM

1. **Indicator:** the name assigned to the indicator. The indicator must support achieving a goal/objective, performing a desired outcome or avoiding a hazard/unwanted outcome. The following criteria should be considered in defining an indicator:

    - Simple – the indicator shall measure a clearly defined variable that stakeholders understand;
    - Specific – the indicator must include a single precise metric;
    - Measurable – the indicator must include a clear and specific metric that can be measured;
    - Relevant – the indicator shall be relevant to the organization's objective or the outcome/activity being measured;
    - Timely – the indicator shall be defined within a specific timeframe.

2. **Description:** a brief yet clear explanation of the indicator, the related metric and what it will measure; e.g. the number of, percentage of, average of, rate of something.

3. **ICAO strategic objective:** the ICAO strategic objective to which the indicator relates.

4. **GASP or GANP element:** if the indicator is related to ICAO's Global Aviation Safety Plan (GASP) or the Global Air Navigation Plan (GANP), the specific priority, objective, module or block of GASP or GANP associated to the indicator.

5. **Project or Programme**: if applicable, the project or programme to which the indicator is related, e.g. USOAP, PBN, RPAS, etc.

6. **Indicator type:** the indicator may be activity-related (or leading), i.e. measuring current or future events and activities and reporting on how well the organization is doing, e.g. audit or inspection results, completion of tasks or projects. Or the indicator may be outcome-related (or lagging), i.e. measuring past events and identifying the conditions within a system after events have happened.

7. **Rationale:** an explanation of how the indicator connects to the identified ICAO strategic objective and what the measurement and monitoring of the indicator supports.

8. **Limitations:** the scope or the extent of the variable or entity that the indicator measures. For example, accident rates may be limited to a specific aircraft category; compliance may apply to a certain type or set of standards.

9. **Definition of technical or specific terms:** if applicable, a definition of any technical, specific or project-related terminology used in naming or defining the indicator that may not be widely known or understood.

10. **Calculation method or formula:** if applicable, the specific or technical formula available for the calculation of the indicator value.

11. **Data set(s):** the data that is needed for measuring the indicator.

12. **Data availability:** the listed datasets may have different levels of availability, varying from 0 for unavailable data to 5 for fully available data.

13. **Data disaggregation level:** the lowest level into which the data can be broken down to a more detailed level. For example, the data may be available on a global, regional or national level; in that case, the disaggregation level is the national data.

14. **Data provider:** the provider of the data or the source where the data comes from. It's better to indicate a database or programme as opposed to a person or a single task/project where the data comes from.

15. **Custodian:** the organization that manages or controls the data; referring to a specific programme (instead of a person) will be helpful.