

## Calculating a Data Breach

$$(DPC \times EI) + CB = \text{Severity}$$

**DPC** – Data Processing Context (type of data and nature processing)

- a) Define the types of the personal data involved in the breach.
- b) Classify the data in at least one of the four categories.
- c) Adjustment by contextual factors (volume, characteristics & nature of data, accuracy, public availability)

Scenario	Examples	Score
Simple	Biographical data, contact details, full name, data on education, family life, professional experience, etc.	<b>1</b>
	<i>Increase:</i> when the volume of “simple data” and/or the characteristics of the controller are such that certain profiling of the individual can be enabled or assumptions about the individual’s social/financial status can be made.	<b>2</b>
	<i>Increase:</i> when the “simple data” and/or the characteristics of the controller can lead to assumptions about the individual’s health status, sexual preferences, political or religious beliefs.	<b>3</b>
	<i>Increase:</i> when due to certain characteristics of the individual (e.g. vulnerable groups, minors), the information can be critical for their personal safety or physical/psychological conditions.	<b>4</b>
Behavioural	Location, traffic data, data on personal preferences and habits, etc.	<b>2</b>
	<i>Decrease:</i> when the nature of the data set does not provide any substantial insight to the individual’s behavioural information or the data can be collected easily (independently from the breach) through publicly available sources (e.g. web searches).	<b>1</b>
	<i>Increase:</i> when the volume of “behavioural data” and/or the characteristics of the controller are such that a profile of the individual can be created, exposing detailed information about his/her everyday life and habits.	<b>3</b>
<i>Increase:</i> if a profile based on individual’s sensitive data can be created.	<b>4</b>	
Financial	Any type of financial data (e.g. income, financial transactions, bank statements, investments, credit cards, invoices, etc.). Includes social welfare data related to financial information.	<b>3</b>

<i>Decrease:</i>	when the nature of the data set does not provide any substantial insight to the individual's financial information (e.g. the fact that a person is the customer of a certain bank without further details).	<b>1</b>
<i>Decrease:</i>	when the specific data set includes some financial information but still does not provide any significant insight to the individual's financial status/situation (e.g. simple bank account numbers without further details).	<b>2</b>
<i>Increase:</i>	when due to the nature and/or volume of the specific data set, full financial (e.g. credit card) information is disclosed that could enable fraud or a detailed social/financial profile is created.	<b>4</b>
<b>Sensitive</b>	Any type of sensitive data (e.g. health, political affiliation, sexual life). When the breach involves 'sensitive data' and the controller is not aware of any lessening factors.	<b>4</b>
<i>Decrease:</i>	when the nature of the data set does not provide any substantial insight to the individual's behavioural information or the data can be collected easily (independently from the breach) through publicly available sources (e.g. web searches).	<b>1</b>
<i>Decrease:</i>	when nature of data can lead to general assumptions.	<b>2</b>
<i>Increase:</i>	when nature of data can lead to assumptions about sensitive information.	<b>3</b>

**EI – Ease of Identification (how easily the identity of individuals can be deduced)**

<b>Scenario</b>	<b>Examples</b>	<b>Score</b>
Negligible	It is extremely difficult to match the data to a particular person, but still, it could be possible under certain conditions.	<b>0.25</b>
Limited	It is possible to match the data to a particular person with access to additional data sources.	<b>0.5</b>
Significant	Identification is possible and directly from the data breached with the basic research needed to rediscover the individual's identity.	<b>0.75</b>
Maximum	Identification is possible directly from the data breached with no special research needed to recover the individual's identity.	<b>1.0</b>

**CB – Circumstances of breach (circumstances of the breach, type breach and intent)**

- Loss of confidentiality
- Loss of integrity
- Loss of availability
- Malicious intent

Scenario	Examples	Score
Confidentiality	Compromised to a number of known recipients (e.g. one customers records sent to another unrelated customer).	<b>0.25</b>
	Compromised to an unknown number of unknown recipients (e.g. wrongly configured website makes data publicly accessible to Internet)	<b>0.5</b>
Integrity	Data altered and possibly use in an incorrect or illegal way but with the possibility to recover.	<b>0.25</b>
	Data altered and possibly use in an incorrect or illegal way without the possibility to recover.	<b>0.5</b>
Availability	Temporarily unavailable.	<b>0.25</b>
	Data cannot be recovered from the controller or the individuals.	<b>0.5</b>
Malicious	The breach was due to an intentional action in order to harm the data controller or individuals.	<b>1.0</b>

**Severity Rating**

Severity Score	Rating	Description
SE < 2	LOW	Individuals either will not be affected or may encounter a few inconveniences, which they will overcome without any problem (time spent re-entering information, annoyances, irritations, etc).
2 <= SE < 3	MEDIUM	Individuals may encounter significant inconveniences, which they will be able to overcome despite a few difficulties (extra costs, denial of access to business services, fear, lack of understanding, stress, minor physical ailments etc).
3 <= SE < 4	HIGH	Individuals may encounter significant consequences, which they should be able to overcome albeit with serious difficulties (misappropriation of funds, blacklisting by banks, property damage, loss of employment, subpoena, worsening of health etc).
4 <= SE	VERY HIGH	Individuals may encounter significant, or even irreversible, consequences, which they may not overcome (financial distress such as substantial debt or an ability to work, long-term psychological or physical ailments, death etc).