

## COLLEGE OF DEFENCE MANAGEMENT

### DATATHON - 2023

### GENERAL INSTRUCTIONS

#### General

1. Data has been identified as the new oil that can be used to derive insights and assist in informed decision-making. Though data is a strategic asset, very less is done at the Armed Forces level for its record, security or analytics.
2. Data analytics can have a significant impact on military decision-making by providing military leaders with insights and information on operations or logistics as the case may be. This can help them make more informed decisions about troop deployments, logistics, and resource allocation. Data analytics can be used to improve the accuracy and effectiveness of military intelligence, by identifying patterns and trends in enemy activity and helping to predict future actions. Overall, **data analytics can help military leaders make better-informed decisions, improve operational efficiency, and ultimately help to achieve mission success.**
3. The CDM started its journey of Data Analytics in 2017. This year it is **starting with Data Analytics Competition christened “Datathon”** pan Armed Forces on a yearly basis. Datathon is a niche initiative by the College of Defence Management (CDM) at the Armed Forces level to democratise and proliferate the culture of Data Analytics.

#### Aim

4. To **promote the culture of decision-making based on data analytics** and to identify new and more effective ways of analysing data, which can ultimately improve the accuracy and speed of decision-making.

#### Objectives

5. Envisaged objectives: -
  - (a) It will **democratise and proliferate a culture of data-driven decision-making** in the Armed Forces.
  - (b) **Identify and further develop new talent** within the military, which can ensure the availability of skilled personnel needed to effectively analyse data and assist in informed decisions making.

(c) Encouraging innovation and experimentation within the military, which can help us **identify new and creative ways of using data** to improve decision-making and operational effectiveness.

(d) Identifying new techniques and approaches for analysing data, which can **help us stay ahead of potential adversaries** and better respond to changing battlefield conditions.

### **Eligibility & Scope**

6. The competition will be **open to officers of the Armed Forces** from all three Services and will be **organised in two phases**. Participants have to select one of the themes given by the College to analyse, where they can also utilise any other open-source dataset along with the dataset given by the College under the selected theme to get maximum insights and recommendations as part of the analysis. The competition will be judged by a panel of experts who will evaluate the participants' analysis and provide feedback on their methods.

### **Themes**

7. Selected themes for this year 'Datathon' are as follows: -

- (a) India's trade trajectory – Geostrategic opportunities
- (b) Mil expenditure across the globe – Implication for India
- (c) Global terrorism – Challenges & counter strategies
- (d) Russia- Ukraine war – Lessons for the World

8. Themes are discussed at the **Appx A** with a few possibilities under the different themes for the reference but the list is not exhaustive and participants are encouraged to utilise more datasets under the selected theme and bring out different perspectives and unknown insights.

## **Methodology**

9. The competition will be conducted in the following manner: -

- (a) The datasets under **relevant themes will be uploaded on the CDM website (<https://cdm.ap.nic.in/>)**. Participants will be given access to these datasets to download from 05 Sep 2023.
- (b) Participants will be at **liberty to use other relevant datasets as per the selected theme** to analyse and bring out pertinent insights and recommendations.
- (c) Participants will have a **maximum of two months to submit their analysis** containing details of insights and screenshots of data analytics software used. The analysis is required to be forwarded to E-mail ID ([datathon.ids@gov.in](mailto:datathon.ids@gov.in)) in PDF format along with **personal details** as per format at **Appx B** before 05 Nov 2023 and intimate same to Coord Officer on mobile (Message/ Whatsapp)
- (d) The competition will be judged by an assessment team at the College which will evaluate the participants' analysis and **select five participants for the presentation of their analytics at the CDM**.
- (e) Participants will present their work of data analytics to a panel of experts in the CDM on the selected date. Awards will be given to the top performers at the end of the competition by an eminent personality to encourage a culture of data-driven decision-making in the Armed Forces.

## **Timeline**

10. The 'Datathon will be conducted in two phases- Online mode followed by a presentation by selected participants at the CDM as per the following timeline: -

- (a) The **theme-based unclassified and open-source datasets** will be uploaded to the CDM website along with general instructions **by 05 Sep 23**.
- (b) Participants are required to **submit their analysis** in the form of a PDF document by uploading it to the CDM website **by 05 Nov 23**.
- (c) An assessment team nominated at the College level assesses the analysis submitted by participants and selects five participants for the final phase to present their analysis in person by 20 Nov 23.
- (d) **Selected five participants would be invited to CDM**, therefore it is requested to **make yourself available** for the same.

- (e) Selected five participants will present their analysis at the CDM to a panel of experts in the field of data analytics, followed by felicitation of awardees.

### **Coord**

11. The competition is being conducted under the aegis of the Faculty of Decision Sciences at the CDM. Following are the details of Coord Offrs for any query or assistance: -

- (a) Col Prashant Singh – Chief Coord Offr  
Mob No – 9413610339
- (b) Col Vijayakrishnan V – Assistant Coord Offr  
Mob No – 7907649140
- (c) Col Raj Abhinav, SM\*\* - Assistant Coord Offr  
Mob No – 9540016274

**Appendix A**

(Refers to Para 8 of  
General Instructions)

**DATATHON THEMES**

1. Selected themes for this year 'Datathon' are as follows: -
  - (a) India's trade trajectory – Geostrategic opportunities
  - (b) Mil expenditure across the globe – Implication for India
  - (c) Global terrorism – Challenges & counter strategies
  - (d) Russia- Ukraine war – Lessons for the World
  
2. Para 3 onwards we have discussed a few possibilities under the different themes for the reference but the list is not exhaustive and participants are encouraged to go beyond, explore unknown data, perspectives and bring out insights under the selected theme.
  
3. **India's trade trajectory – Geostrategic opportunities.** Participants can draw out several insights using data analytics into the country's trade patterns, trends, and potential opportunities. Here are some potential insights that could be derived from such analysis: -
  - (a) **Export and Import Trends.** Overall trends in India's exports and imports, including the growth rates, major trading partners, and sectors driving trade. It can help identify which industries or products are contributing significantly to India's trade balance.
  
  - (b) **Sector-wise Analysis.** Data analytics can highlight the performance of various industries in terms of exports and imports deeper into specific sectors by dividing various industries. It can identify sectors with high growth potential.
  
  - (c) **Geographical Analysis.** It can identify India's major trading partners and regions with the potential for increased trade. It can reveal emerging

markets where India can focus its export efforts or identify areas where import substitution can be encouraged.

(d) **Trade Balance and Deficit Analysis.** Data analytics can provide insights into India's trade balance, highlighting periods of trade surplus or deficit. It can identify key factors affecting the trade deficit, such as import dependence on certain goods, fluctuating commodity prices, or changes in global demand.

(e) **Comparative Analysis.** Data analytics can enable comparative analysis between India and its peers in terms of trade performance, market share, and export competitiveness. It can identify areas where India lags or where it has a competitive advantage.

(f) **Emerging Trends and Opportunities.** Data analytics can help predict future trade trends and highlight emerging opportunities. This can guide policymakers, businesses, and investors in making informed decisions.

(g) **Impact of Policy Changes.** Data analytics can assess the impact of policy changes on India's trade trajectory. It can help evaluate the effectiveness of trade policies and identify areas for improvement.

(h) **Risk Assessment.** Data analytics can also assist in assessing risks associated with India's trade, such as market volatility, currency fluctuations, geopolitical factors, or trade conflicts. It can help develop risk mitigation strategies and enhance the resilience of India's trade ecosystem.

4. **Mil expenditure across the globe – Implication for India.** Data analytics of military expenditure across the globe can provide several insights and lessons for India. Here are a few possible insights: -

(a) **Global Trends.** Data analytics can reveal global trends in military expenditure, such as overall spending patterns, regional disparities, and changes over time. Understanding these trends can help India benchmark its military spending and make informed decisions.

(b) **Comparative Analysis.** By comparing India's military expenditure with other countries, data analytics can highlight areas where India may be over or underinvesting. This analysis can guide resource allocation and help identify potential gaps or opportunities for optimization.

(c) **Economic Impact.** Analytics of the relationship between military expenditure and economic indicators, such as GDP growth and employment rates, can provide insights into the economic impact of defence spending.

(d) **Defence Procurement Efficiency.** Data analytics can assess the efficiency and effectiveness of defence procurement processes. Analysis of historical data on procurement projects, including costs, timelines, and outcomes, India can identify best practices, streamline procedures, and reduce wasteful spending.

(e) **Technological Advancements.** Studying global military expenditure can shed light on emerging technologies and defence capabilities that are receiving significant investments.

(f) **Defence Budget Allocation.** Data analytics can assist in optimizing the allocation of India's defence budget across different domains, such as personnel, equipment, research, and infrastructure. This approach ensures that resources are allocated strategically, addressing the country's specific security challenges and priorities.

(g) **Risk Assessment.** Data analytics can help identify potential security risks and threats by examining global military expenditure. This analysis can assist India's defence planning, ensuring that the allocated resources are aligned with the evolving geopolitical landscape and emerging challenges.

(h) **Long-term Planning.** Historical data on military expenditure can enable predictive analytics, allowing India to forecast future trends and plan for long-term defence needs. This approach assists in developing robust defence strategies, avoiding short-term fluctuations, and ensuring sustainable military capabilities.

5. **Global terrorism – Challenges & counter strategies.** Data analytics of global terrorism can provide several insights into patterns, trends, and characteristics of terrorist activities. Here are some possible insights: -

(a) **Geographic Hotspots.** Data analytics can identify geographic regions that are hotspots for terrorist activities. The data analytics on the frequency, intensity and locations of attacks can highlight areas that require increased attention and resources for counterterrorism efforts.

(b) **Trend Analysis.** Examining historical data, data analytics can reveal trends in global terrorism, including changes in attack methods, target preferences, and the evolution of terrorist organizations. This analysis helps understand the dynamics of terrorism and anticipate future threats.

(c) **Terrorist Group Profiling.** Data analytics can profile terrorist organizations by analysing their tactics, recruitment patterns, financing sources, and relationships with other groups. This information helps identify key players, understand their capabilities, and devise effective strategies to counter their activities.

(d) **Social Network Analysis.** Social networks and communication patterns of terrorists can uncover connections, hierarchies, and facilitators within terrorist networks.

(e) **Root Cause Identification.** Data analytics can assist in identifying underlying factors that contribute to terrorism, such as political instability, economic disparities, or social grievances. By understanding these root causes, policymakers can develop targeted interventions to address the conditions that foster terrorism.

(f) **Predictive Analytics.** Historical data analytics can enable predictive modelling to forecast potential terrorist activities. By analysing factors such as geopolitical events, socioeconomic indicators, and previous attack patterns, it is possible to assess the likelihood of future attacks, allowing for proactive countermeasures.

(g) **Counterterrorism Strategy Evaluation.** Through data analytics, it is possible to evaluate the effectiveness of various counterterrorism strategies and initiatives. By examining the outcomes and impact of past interventions, policymakers can refine and improve their approaches to combat terrorism.

(h) **Media and Propaganda Analysis.** Analyse the spread and impact of terrorist propaganda through traditional and online media channels. This analysis can help understand how extremist ideologies are disseminated, enabling the development of effective counter-narratives and digital counterterrorism strategies.

(j) **International Cooperation.** Data analytics can identify patterns of cross-border collaboration among terrorist organizations. By examining financial transactions, communication networks, and recruitment activities, it



becomes possible to enhance international cooperation and intelligence sharing in counterterrorism efforts.

6. **Russia- Ukraine war – Lessons for the World.** Data Analytics of the Russia-Ukraine war can provide several insights into the conflict dynamics, military operations, and geopolitical implications. Here are some possible insights: -

(a) **Conflict Patterns.** Data analytics can help identify patterns in the conflict, such as the frequency and intensity of military engagements, territorial shifts, and key events. This analysis can provide a comprehensive view of the conflict's progression and identify periods of escalation or de-escalation.

(b) **Military Capabilities.** The analytics of available data on military assets, troop movements, and tactics employed by both sides can provide insights into the capabilities and strategies of the warring parties. This information can help assess relative strengths and weaknesses and anticipate future developments.

(c) **Humanitarian Impact.** Data analytics can assess the humanitarian impact of the conflict, such as the displacement of civilians, casualties, and infrastructure damage. This analysis helps quantify the humanitarian crisis, prioritize relief efforts, and identify areas where humanitarian assistance is most needed.

(d) **Geopolitical Dynamics.** By examining geopolitical factors and alliances related to the conflict, data analytics can provide insights into the motivations, interests, and strategies of external actors involved. This analysis can shed light on the broader implications of the conflict for regional and international stability.

(e) **Information Warfare.** Data analytics can analyse the use of information warfare, propaganda, and disinformation in the conflict. By examining social media trends, online narratives, and information dissemination patterns, it becomes possible to understand the role of information warfare in shaping public opinion and influencing the course of the conflict.

(f) **Economic Impact.** Analysis of economic data related to the conflict, such as trade disruptions, economic sanctions, and resource allocation, can provide insights into the economic consequences for both Russia and Ukraine. This analysis helps assess the long-term economic sustainability of the conflict and potential avenues for economic leverage.

(g) **International Response.** Data analytics can assess the international response to the conflict, including diplomatic efforts, sanctions, and support for the parties involved. The analytics of the actions and statements of different countries and international organizations, insights can be drawn regarding the effectiveness and influence of international actors.

(h) **Casualty Analysis.** The data analytics of available data on casualties, including military personnel and civilians can provide insights into the human cost of the conflict. This analysis can help understand the patterns of violence, identify vulnerable populations, and contribute to efforts aimed at conflict resolution and accountability.

(j) **Displacement and Migration.** Data analytics can assess patterns of displacement and migration resulting from the conflict. By analysing data on population movements, demographics, and refugee flows, insights can be drawn regarding the humanitarian consequences and long-term implications for affected communities.

**Appendix B**

(Refers to Para 9(c) of  
General Instructions)

**INDIVIDUAL DETAILS**

<b>Service No</b>	
<b>Rank</b>	
<b>Name</b>	
<b>Mobile No</b>	
<b>Email ID</b>	
<b>Experience in Data Analytics (Yrs)</b>	
<b>Unit</b>	
<b>Formation</b>	
<b>Address</b>	
<b>Platform/ Software Used</b>	
<b>Any other info</b>	