



# CURRENT AFFAIRS



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## FULL SELF DRIVING TECHNOLOGY

### WHY IN THE NEWS?

Elon Musk, CEO of Tesla, has reportedly secured tentative approval to introduce Full Self-Driving (FSD) technology in China, overcoming significant administrative hurdles in Beijing following discussions with top government officials.

Musk's unexpected visit to China on Sunday, April 28, came shortly after postponing his anticipated trip to India, citing Tesla-related commitments. This development follows his engagement with Prime Minister Narendra Modi and founders of an Indian space startup.

### WHAT IS FSD TECHNOLOGY?

Full Self-Driving (FSD) cars are vehicles equipped with advanced autonomous driving technology that enables them to navigate and operate on roads without human intervention. These vehicles utilize a combination of sensors, cameras, radar, GPS, and artificial intelligence algorithms to perceive their surroundings, interpret road conditions, and make driving decisions.

FSD technology aims to replicate and even surpass human driving capabilities, allowing cars to handle various driving tasks such as steering, accelerating, and braking, as well as navigating complex traffic scenarios, intersections, and obstacles.

While some cars on the market offer advanced driver-assistance systems (ADAS) that provide features like adaptive cruise control and lane-keeping assistance, true FSD cars promise a higher level of autonomy, potentially enabling occupants to relax, work, or engage in other activities while the car handles the driving.

However, it's important to note that achieving full autonomy in all driving situations remains a significant technical and regulatory challenge. As of now, most FSD systems still require human supervision and intervention in certain circumstances, and widespread deployment of fully autonomous vehicles is still a subject of ongoing research, development, and regulatory consideration.

### SIGNIFICANCE OF FSD TECHNOLOGY

- **Safety Improvement:** FSD technology has the potential to significantly reduce accidents caused by human error, which is currently a leading cause of traffic incidents. With advanced sensors and AI algorithms, FSD cars can potentially react faster and more accurately to potential hazards, leading to safer roads for all users.

- **Increased Accessibility:** Autonomous vehicles can provide transportation options for individuals who are unable to drive due to age, disability, or other reasons. This could enhance mobility and independence for people who are currently reliant on public transportation or assistance from others.
- **Efficiency and Productivity:** FSD technology can optimize traffic flow and reduce congestion by coordinating vehicle movements more efficiently. This could lead to shorter travel times, less time wasted in traffic jams, and increased productivity for commuters.
- **Urban Planning and Infrastructure:** The widespread adoption of FSD technology may influence urban planning and infrastructure development. Cities may redesign streets, intersections, and parking facilities to accommodate autonomous vehicles more effectively, potentially leading to more efficient land use and reduced demand for parking space.
- **Environmental Benefits:** FSD technology could contribute to reduced fuel consumption and emissions by promoting smoother driving patterns and optimizing routes. Electric autonomous vehicles, in particular, could help accelerate the transition to sustainable transportation and mitigate the environmental impact of traditional vehicles.
- **New Business Models:** The rise of autonomous vehicles may give rise to new business models and services, such as ride-hailing fleets operated by companies like Uber or Lyft, delivery services utilizing autonomous trucks, and shared autonomous vehicle ownership programs. These innovations could reshape the automotive industry and create new economic opportunities.

## POTENTIAL CHALLENGES

1. **Safety Concerns:** Ensuring the safety of autonomous vehicles remains a primary challenge. While FSD technology aims to reduce accidents caused by human error, it must demonstrate reliability and robustness across a wide range of driving scenarios, including adverse weather conditions, complex urban environments, and unpredictable human behavior.
2. **Regulatory and Legal Frameworks:** The legal and regulatory landscape surrounding autonomous vehicles is still evolving. Governments need to establish clear standards, regulations, and liability frameworks to govern the development, testing, certification, and deployment of FSD technology. Harmonizing regulations across different jurisdictions presents additional complexities.
3. **Ethical and Moral Dilemmas:** FSD systems may encounter situations where they must make split-second decisions with ethical implications, such as prioritizing the safety of occupants versus pedestrians or choosing between colliding with different obstacles. Resolving these ethical dilemmas and ensuring alignment with societal values and norms is a significant challenge.
4. **Cybersecurity Risks:** As vehicles become more connected and reliant on digital technologies, they become vulnerable to cyber threats such as hacking, malware, and unauthorized access. Safeguarding FSD systems against cyber attacks and ensuring the integrity, confidentiality, and availability of data is essential for their safety and reliability.
5. **Technical Complexity and Reliability:** Developing FSD technology requires overcoming technical challenges related to sensor accuracy, perception algorithms, decision-making systems, and software validation. Ensuring the reliability and robustness of these systems in real-world conditions, including edge cases and rare scenarios, is a formidable task.
6. **Infrastructure Readiness:** The deployment of FSD technology may require upgrades to existing infrastructure, such as roads, traffic signals, signage, and communication networks. Ensuring that infrastructure is compatible with autonomous vehicles and supports their safe and efficient operation is crucial for their widespread adoption.

7. **Public Trust and Acceptance:** Building public trust and acceptance of autonomous vehicles is essential for their successful integration into society. Addressing concerns related to safety, privacy, job displacement, and societal impacts through education, transparency, and engagement is critical for fostering acceptance of FSD technology.
8. **Equity and Accessibility:** Ensuring that autonomous mobility benefits all segments of society, including underserved communities, individuals with disabilities, and rural areas, is a challenge. Addressing equity and accessibility considerations in the design, deployment, and pricing of autonomous transportation services is essential for promoting social inclusion and reducing transportation disparities.

By following this roadmap and adopting a collaborative, inclusive, and responsible approach, stakeholders can advance Full Self-Driving technology while addressing challenges and maximizing its potential to transform transportation, enhance safety, and improve mobility for all.

Ankit Kumar

## UNOPPOSED VICTORY

**THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "UNOPPOSED VICTORY". THIS TOPIC IS RELEVANT IN THE "POLITY AND GOVERNANCE" SECTION OF THE UPSC CSE EXAM.**

### WHY IN THE NEWS?

The BJP's candidate for the Surat Lok Sabha seat in Gujarat has secured victory without contest as the Congress party's candidate had their nomination paper rejected, and other contenders withdrew their nominations.

### MORE ABOUT THE ISSUE

- In the current scenario, the Congress party's candidate for the Surat constituency submitted three sets of nomination papers. These were supported by his brother-in-law, nephew, and business partner. An objection was raised by a BJP worker, asserting that the signatures of the supporters were not authentic.
- The Returning Officer (RO) received affidavits from the supporters stating they hadn't signed the papers. The candidate was given a day to respond to these objections. As the supporters couldn't appear before the RO within the designated scrutiny period, all three sets of nomination papers were dismissed.
- According to election regulations, a political party can nominate a substitute candidate if the original candidate's nomination is rejected. The Congress party nominated Suresh Padsala as their substitute candidate. However, the substitute candidate's nomination was also rejected due to the same issue of the supporter's signatures being questioned.
- Subsequently, with other nominations either being rejected or withdrawn, the path was cleared for BJP candidate Mukesh Dalal to be declared the winner.

## CRITERIA FOR THE VALID NOMINATION

- The criteria for a valid nomination are outlined in **Section 33 of the Representation of the People Act (RPA), 1951**.
- 1. The proposer(s) of the candidate must be an elector(s) from the respective constituency where the nomination is filed.
- 2. Any individual above 25 years old is eligible to contest Lok Sabha elections from any constituency in India.
- 3. A recognised party (either national or state) requires only one proposer, while candidates fielded by unrecognised parties and independents need the support of ten proposers.
- 4. Each candidate is allowed to submit up to four nomination papers with different sets of proposers, facilitating acceptance even if one set is deemed valid.
- **Section 36** of the RP Act addresses the scrutiny of nomination papers by the Returning Officer (RO). It stipulates that nominations should not be rejected for minor defects, but the authenticity of the candidate's or proposer's signature is crucial grounds for rejection.
- Regarding uncontested elections, **Section 53(3) of the RPA, 1951** outlines the procedure. If the number of candidates is fewer than the available seats, the RO must promptly declare all such candidates elected. **These actions are guided by Section 33 of the Act**, which details the presentation of nomination papers and the criteria for valid nominations.



## EARLIER INSTANCES OF GETTING ELECTED UNOPPOSED TO LOK SABHA

- There have been at least 35 occurrences of candidates securing victory in Lok Sabha elections without facing any opposition since 1951. Notable personalities such as Y.B. Chavan, Farooq Abdullah, Hare Krishna Mahtab, T.T. Krishnamachari, P.M. Sayeed, and S.C. Jamir have ascended to the Lok Sabha without contesting against any opponents.
- The Congress party has had the highest number of candidates elected unopposed, and particular constituencies like Sikkim and Srinagar have witnessed multiple instances of uncontested elections.
- While the majority of candidates have won unopposed in regular elections, there have been instances, like Dimple Yadav's victory in the Kannauj Lok Sabha by-poll in 2012, where candidates have emerged triumphant without facing any competition even in by-polls.
- The trend of candidates being elected unopposed reflects various factors, such as rejection of nominations, withdrawals by other candidates, and strategic decisions by political parties aiming for favourable outcomes in specific constituencies.

## CONCERNS AND IMPLICATIONS DUE TO UNOPPOSED ELECTIONS

- **Lack of Voter Engagement:** Uncontested elections have the potential to diminish voter participation and engagement since individuals may perceive their vote as inconsequential when there is only one candidate. Consequently, this phenomenon can undermine the democratic process.
- **Inadequate Representation:** With only one candidate available, voters might feel that their needs and interests are not sufficiently represented due to the absence of choice or competition. This can lead to a decline in trust towards the governing body or organisation.
- **Stagnant Leadership:** Uncontested elections tend to perpetuate the existing status quo and discourage new candidates from entering the fray, resulting in a dearth of fresh perspectives and vigour within the governing board or elected positions. Encouraging healthy turnover is imperative in such scenarios.
- **Undermining Democratic Principles:** By depriving voters of a meaningful choice, uncontested elections subvert the fundamental principles of democracy. Such occurrences can be viewed as a departure from democratic ideals.
- **Voter Apathy and Disengagement:** The perception of predetermined outcomes in uncontested elections may lead to decreased voter engagement and a reluctance to participate in future electoral processes. This cycle of voter apathy can exacerbate the problem.
- **Concerns about Manipulation:** Instances of uncontested elections, such as the situation in Surat, may raise suspicions of potential manipulation by political parties aiming to secure favourable outcomes through the electoral process.

## WAY FORWARD

- **Strengthening Nomination Procedures:** Implement measures to enhance the scrutiny of nomination papers to ensure the authenticity of signatures and compliance with electoral regulations. This could involve introducing stricter verification processes and penalties for submitting fraudulent nominations.
- **Promoting Electoral Competition:** Encourage political parties to actively field candidates in all constituencies, thereby fostering competition and providing voters with meaningful choices. Incentivize parties to nominate candidates through awareness campaigns highlighting the importance of contested elections in ensuring democratic representation.

- **Proposing Changes to the First-Past-the-Post (FPTP) System:** The FPTP system, also recognised as the simple majority system, determines the winner of an election in a constituency based on the candidate with the highest number of votes. Although FPTP is straightforward, it may not always ensure a fully representative outcome, as a candidate could emerge victorious even if they secure less than half of the total votes.
- **Increasing Voter Awareness and Engagement:** Launch public awareness campaigns to educate voters about the significance of their participation in the electoral process, even in uncontested elections. Emphasise the role of civic duty and the impact of voter apathy on democratic principles.
- **Encouraging New Candidates:** Create platforms and resources to support new candidates, particularly from underrepresented communities, in participating in elections. Offer training programs, mentorship opportunities, and financial assistance to facilitate their entry into politics and promote diverse leadership.
- **Enhancing Oversight and Accountability:** Strengthen electoral oversight mechanisms to detect and prevent manipulation or irregularities in uncontested elections. This could involve empowering independent election commissions and establishing transparent reporting mechanisms for candidate nominations and withdrawals.

### PRELIMS PRACTISE QUESTION

#### Q1. Consider the following statements:

1. The Election Commission of India consists of five members.
2. The scheduling of general elections and bye-elections is determined by the Union Ministry of Home Affairs.
3. The Election Commission is responsible for resolving disputes related to the splits or mergers of recognised political parties.

#### How many of the statements above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

**Answer: A**

### MAINS PRACTISE QUESTION

**Q1. How does the First-Past-the-Post (FPTP) system determine the outcome of elections, and what are its potential shortcomings?**

**Q2. Evaluate the effectiveness of existing nomination procedures in preventing fraudulent nominations and ensuring fair competition in elections.**