

2019

# TCRP J-11 / Task 34: APTAtech Workshop Use Case Notes Pages

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*Disclaimer*

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## **Bus Automation for Maintenance and Yard Operations**

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- 1) On a scale of 1 to 10, to what degree does this use case address a current or future need in the industry? And, what current or future need(s) does this use case address?

## **Bus Automation for Maintenance and Yard Operations**

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- 2) If the industry implemented this use case, what jobs would be directly impacted (or indirectly but significantly impacted) and how?
  - a. Describe what job tasks would be changed and for which positions?
  - b. What new jobs or opportunities would be created?
  - c. What would be the effect (positive or negative) on recruitment of new employees?

## **Bus Automation for Maintenance and Yard Operations**

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- 3) What cost savings (and scale of savings) might this use case make possible? Cost savings could include one or more of the following: reduction in employee positions or hours, increased employee safety, reduced risk and liability, decreasing staff turnover or recruitment costs, more efficient customer-relationship management procedures, and more.

## **Bus Automation for Maintenance and Yard Operations**

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- 4) What financial outcome would make investing in this use case reasonable? (For example, would you need to break even and in what horizon?)

## **Bus Automation for Maintenance and Yard Operations**

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- 5) What are potential operational opportunities and challenges associated with this use case?

## **Bus Automation for Maintenance and Yard Operations**

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- 6) Do you think some yard space that is currently dedicated to moving and parking vehicles could be reclaimed for other uses if space for human error and vehicle ingress/egress was not required?



## **Bus Automation for Maintenance and Yard Operations**

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- 7) What aspects of this use case do you find most implementable and desirable (e.g., automated movements to cleaning/fueling areas, automated movements to maintenance bays, automated pull-out/parking movements)?

## **Bus Automation for Maintenance and Yard Operations**

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8) Can this use case improve customer service? If so, how?

## **Low-Speed Automated Shuttles**

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- 1) On a scale of 1 to 10, to what degree does this use case address a current or future need in the industry? And, what current or future need(s) does this use case address?

## **Low-Speed Automated Shuttles**

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- 2) If the industry implemented this use case, what jobs would be directly impacted (or indirectly but significantly impacted) and how?
  - a. Describe what job tasks would be changed and for which positions?
  - b. What new jobs or opportunities would be created?
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## **Low-Speed Automated Shuttles**

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## **Low-Speed Automated Shuttles**

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- 4) What financial outcome would make investing in this use case reasonable? (For example, would you need to break even and in what horizon?)

## **Low-Speed Automated Shuttles**

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- 5) Will the transit industry use low-speed automated shuttles to replace existing routes/services (and what type of routes/services) or to expand service to unserved areas or markets? If both, explain what the balance will likely be and why.

## **Low-Speed Automated Shuttles**

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- 6) If transit agencies include low-speed automated shuttles in their permanent service menu, will transit agencies likely desire to directly operate the service or to purchase transportation from a turn-key provider?



## **Low-Speed Automated Shuttles**

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- 7) For this use case, how likely will the industry employ:
- a. An on-board customer service representative? If so, how many and with what qualifications?
  - b. An on-board safety driver? If so, with what duties and qualifications?
  - c. A remote safety driver? If so, how many vehicles per driver and with what duties and qualifications?

## **Low-Speed Automated Shuttles**

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- 8) What are potential operational opportunities and challenges associated with this use case?

## **Low-Speed Automated Shuttles**

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- 9) What are potential customer service opportunities and challenges associated with this use case?

## **Automated Bus Rapid Transit**

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- 1) On a scale of 1 to 10, to what degree does this use case address a current or future need in the industry? And, what current or future need(s) does this use case address?

## **Automated Bus Rapid Transit**

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- 2) If the industry implemented this use case, what jobs would be directly impacted (or indirectly but significantly impacted) and how?
  - a. Describe what job tasks would be changed and for which positions?
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## **Automated Bus Rapid Transit**

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- 3) What cost savings (and scale of savings) might this use case make possible? Cost savings could include one or more of the following: reduction in employee positions or hours, increased employee safety, reduced risk and liability, decreasing staff turnover or recruitment costs, more efficient customer-relationship management procedures, and more.

## **Automated Bus Rapid Transit**

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- 4) What financial outcome would make investing in this use case reasonable? (For example, would you need to break even and in what horizon?)

## **Automated Bus Rapid Transit**

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- 5) Will the transit industry use automated BRT to replace existing routes/services (and what type of routes/services) or to expand service to unserved areas or markets? If both, explain what the balance will likely be and why.



## **Automated Bus Rapid Transit**

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- 6) If transit agencies include automated BRT in their permanent service menu, will transit agencies likely desire to directly operate the service or to purchase transportation from a turn-key provider?

## **Automated Bus Rapid Transit**

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- 7) For this use case, how likely will the industry employ:
- a. An on-board customer service representative? If so, how many and with what qualifications?
  - b. An on-board safety driver? If so, with what duties and qualifications?
  - c. A remote safety driver? If so, how many vehicles per driver and with what duties and qualifications?

## **Automated Bus Rapid Transit**

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- 8) What are potential operational opportunities and challenges associated with this use case?

## **Automated Bus Rapid Transit**

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- 9) What are potential customer service opportunities and challenges associated with this use case?

## **Private Operators of Automated Mobility on Demand**

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- 1) On a scale of 1 to 10, to what degree do you believe this use case will become feasible within the next 10-20 years? If private operators achieve a significant market presence, what impacts with there be on public transit agencies?

## **Private Operators of Automated Mobility on Demand**

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- 2) If this use case were implemented by private operators, what jobs in the *transit workforce* would be directly impacted (or indirectly but significantly impacted) and how?

## **Private Operators of Automated Mobility on Demand**

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- 3) To what degree will private operators of automated MOD attempt, on their own, to address first/last-mile challenges or to integrate with transit service?

## **Private Operators of Automated Mobility on Demand**

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- 4) To what degree will private operators of automated MOD work to ensure their service offerings are affordable, equitable, and accessible? Why?



## **Private Operators of Automated Mobility on Demand**

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- 5) For this use case, how likely will private automated MOD operators:
- a. Compete with transit's labor pool for fleet maintenance staff?
  - b. Compete with transit's labor pool for other positions? Which positions?

## **Private Operators of Automated Mobility on Demand**

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- 6) What are opportunities and challenges for transit agencies associated with this use case?

## **Transit Agency Operators of Automated Mobility on Demand**

- 1) On a scale of 1 to 10, to what degree does this use case address a current or future need in the industry? And, what current or future need(s) does this use case address?

## **Transit Agency Operators of Automated Mobility on Demand**

- 2) If the industry implemented this use case, what jobs would be directly impacted (or indirectly but significantly impacted) and how?
  - a. Describe what job tasks would be changed and for which positions?
  - b. What new jobs or opportunities would be created?
  - c. What would be the effect (positive or negative) on recruitment of new employees?

## **Transit Agency Operators of Automated Mobility on Demand**

- 3) What cost savings (and scale of savings) might this use case make possible? Cost savings could include one or more of the following: reduction in employee positions or hours, increased employee safety, reduced risk and liability, decreasing staff turnover or recruitment costs, more efficient customer-relationship management procedures, and more.

## **Transit Agency Operators of Automated Mobility on Demand**

- 4) What financial outcome would make investing in this use case reasonable? (For example, would you need to break even and in what horizon?)

## **Transit Agency Operators of Automated Mobility on Demand**

- 5) Will the transit industry use automated MOD to replace existing routes/services (and what type of routes/services) or to expand service to unserved areas or markets? If both, explain what the balance will likely be and why.

## **Transit Agency Operators of Automated Mobility on Demand**

- 6) If transit agencies include automated MOD in their permanent service menu, will transit agencies likely desire to directly operate the service or to purchase transportation from a turn-key provider?



## **Transit Agency Operators of Automated Mobility on Demand**

- 7) For this use case, how likely will the industry employ:
- a. An on-board customer service representative? If so, how many and with what qualifications?
  - b. An on-board safety driver? If so, with what duties and qualifications?
  - c. A remote safety driver? If so, how many vehicles per driver and with what duties and qualifications?

## **Transit Agency Operators of Automated Mobility on Demand**

- 8) What are potential operational opportunities and challenges associated with this use case?

## **Transit Agency Operators of Automated Mobility on Demand**

- 9) What are potential customer service opportunities and challenges associated with this use case?

## **Transit Agency Operators of Automated Mobility on Demand**

- 10) As a percentage, how many current demand response customers could be safely transitioned (defined as those that could safely/comfortably travel to their destination without operator assistance), to an automated MOD service?

## **Automated Local Bus Transit**

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## **Automated Local Bus Transit**

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## **Automated Local Bus Transit**

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## **Automated Local Bus Transit**

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- 4) What financial outcome would make investing in this use case reasonable? (For example, would you need to break even and in what horizon?)



## **Automated Local Bus Transit**

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- 5) Will the transit industry use automated local bus transit to replace existing routes/services (and what type of routes/services) or to expand service to unserved areas or markets? If both, explain what the balance will likely be and why.

## **Automated Local Bus Transit**

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- 6) If transit agencies include automated local bus transit in their permanent service menu, will transit agencies likely desire to directly operate the service or to purchase transportation from a turn-key provider?

## **Automated Local Bus Transit**

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## **Automated Local Bus Transit**

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- 8) What are potential operational opportunities and challenges associated with this use case?

## **Automated Local Bus Transit**

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- 9) What are potential customer service opportunities and challenges associated with this use case?