

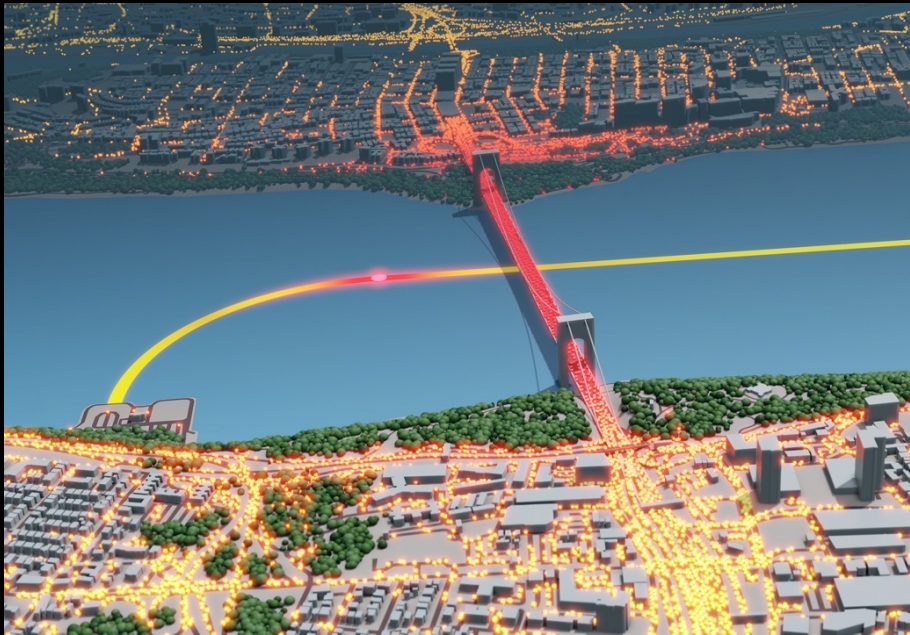


hyke

URBAN MOBILITY REDISCOVERED

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FROM LAST RESORT TO FIRST CONSIDERATION



WHY AUTONOMY?

TECH DRIVEN:

- EVERYBODY LOVES A CHALLENGE
- THE “MOON LANDING” OF THE SHIPPING INDUSTRY?

COST DRIVEN:

- REDUCE PERSONNEL COSTS
- IMPROVE OPERATIONAL EFFICIENCY

SAFETY DRIVEN?

- IMPROVE SITUATIONAL AWARENESS
- REDUCE NUMBER OF INCIDENTS
- IMPROVE OPERATIONAL SAFETY



**“We do these
things not
because they are
easy, but because
they are hard.”**

- John F. Kennedy (1962)



LOOK, NO HANDS!

“2 Killed in Driverless Tesla Car Crash”

New York Times, April 18, 2021

“Tesla Autopilot system was on during fatal California crash, adding to self driving safety concerns”

The Washington Post, May 15, 2021

“Uber's self-driving operator charged over fatal crash”

BBC, September 16, 2020

AUTONOMY IS HAPPENING...



...AND NEEDS REGULATION



CHALLENGES - TECHNOLOGY



DEMONSTRABLE? YES

PILOTABLE? CONDITIONALLY YES

READY FOR WIDESPREAD APPLICATION? NO

SOME ISSUES:

- SENSOR REQUIREMENTS
- REDUNDANCY REQUIREMENTS
- COMMUNICATION REQUIREMENTS
- DATA TRANSFER/LATENCY REQUIREMENTS
- DATA PROCESSING REQUIREMENTS
- TESTING AND VERIFICATION REQUIREMENTS

CHALLENGES – HUMAN IN THE LOOP



ON-BOARD COMMANDER ON STANDBY – YES

ON-SHORE COMMANDER – CONDITIONALLY YES

UNMANNED - NO

SOME ISSUES

- CONSTANT MONITORING?
- CONDITION MONITORING ?
- DIRECT REMOTE CONTROL?
- ON-SHORE GUIDANCE?
- ON-BOARD SAFETY PERSONNEL?
- ROC BUSINESS MODELS?

CHALLENGES – OTHER ISSUES



PUBLIC ACCEPTANCE

- How will the public react to stepping on board an unmanned or autonomously operated vessel?

CONDITIONS

- In addition to vessel certifications, do we also need to look at the conditions in which the operation takes place?

ACCOUNTABILITY

- Who will be accountable for incidents/accidents?
- How will that affect insurance?

“UNKNOWN UNKNOWNs”

HYKE'S APPROACH

KNOWN CHALLENGES

- TECHNOLOGY STILL HAS SOME WAYS TO GO
- PUBLIC PERCEPTION & ACCEPTANCE IS UNKNOWN
- REGULATION IS IMMATURE

OUR MINDSET

- WE HAVE A PROBLEM TO SOLVE REGARDLESS OF OBSTACLES
- HOW CAN WE SAVE ON COST IN THE MEAN TIME?

OUR GOAL

- FLEET AUTONOMY AS PART OF INTEGRATED SMART CITY MOBILITY SYSTEMS

