

METR ELECTRONIC REGULATIONS

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Welcome to the third stakeholder workshop for the development of the METR Operational Concept (ConOps)

Agenda

- Overview
- Proposed rule lifecycle
- Legislated rules
- Warranted rules
- Operationally decided rules
- Planned rules
- Terminating rules
- Responsibilities and Processes

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Our discussion today will start with providing a quick refresh of the overview of METR and then discuss various topics related to the types of electronic regulations and their lifecycles

ACKNOWLEDGEMENTS

Small group has started structuring the problem

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Before we begin, it is important to acknowledge that the materials developed to date represents a team effort. While there is a core editing group, as shown in the upper left, the concepts presented within this presentation already reflect valuable inputs from the review team shown on the right. In addition, the overall document is being prepared under the auspices of ISO/TC 204/WG 19, and especially its METR Drafting Team.

Ground Rules

- METR is very complex and involves many disciplines
- Workshops are based on this structure and designed to receive feedback
- If you have comments, please voice your concerns
 - Verbally (and concisely) during discussion slides (marked with  icon)
 - Using chat window
 - Using discussion forum (<https://github.com/ISO-TC204/iso24315p1/discussions>)

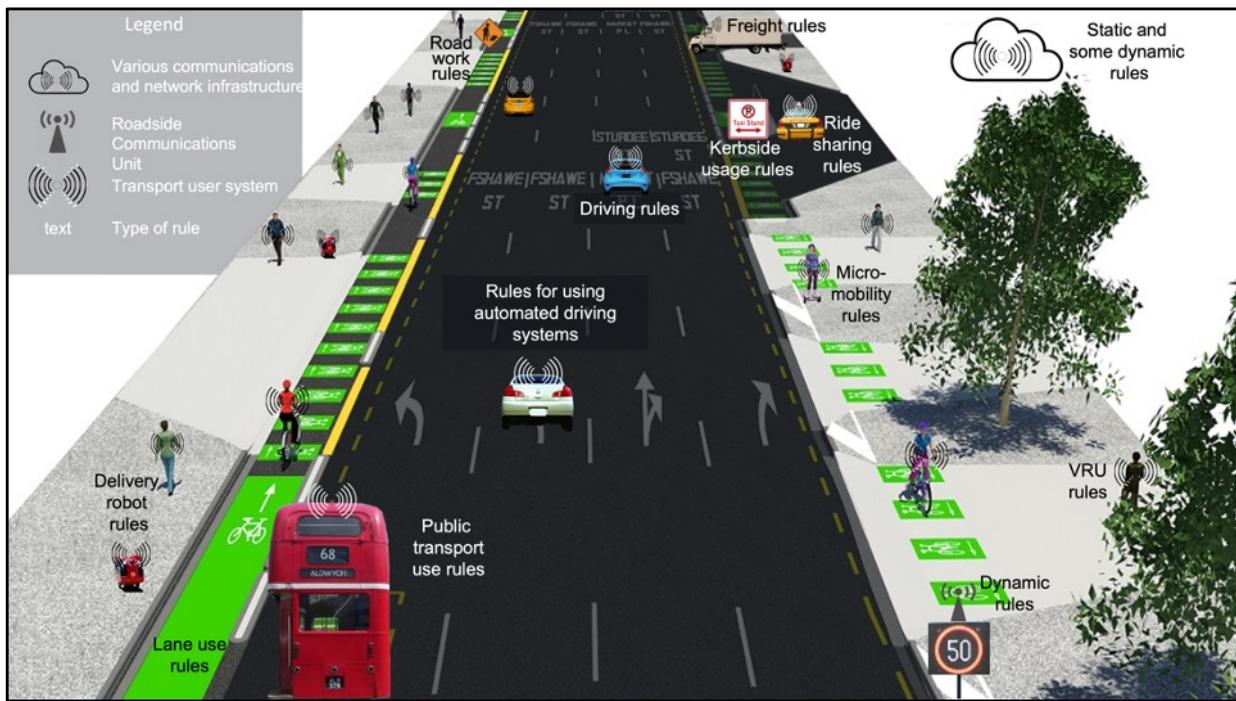
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Before we begin, it is useful for everyone to understand the ground rules of our conversation. The development of the ConOps is intended to be a cooperative effort that reflects the input from stakeholders from different perspectives. To facilitate this process, the development team has prepared the workshops to gain feedback from stakeholders – but your feedback does not have to be limited to the topics presented.

The workshops are generally structured to present a topic and then gain feedback. Participants are welcome to voice their concerns during the workshop presentations, either verbally or using the chat window, but we request that verbal feedback is made when we are on discussion slides. We also recognize that our workshops are time limited and comments should be kept fairly concise. If major topics of discussion arise we can schedule additional meetings to focus on specific points, as needed. We have also established a discussion forum on the Github site to promote off-line conversations and encourage everyone to use the facility,

After we complete the workshops, we expect to prepare a draft ConOps early next year, and there will be ample opportunity for additional comments on the document once distributed.



METR is intended to support all transport user systems. This includes: vehicle systems (e.g., automated driving systems and driver support systems), sidewalk delivery robots, and other devices such as smartphones used by pedestrians and perhaps units on-board micromobility devices (e.g., e-scooter interfaces)

The information provided to these users would potentially include all rules related to using the transport facilities, such as (from top and proceeding clockwise) any special rules for freight delivery or for the operation of heavy vehicles, kerbside usage rules (e.g., bus stop, taxi stand), ride sharing rules (e.g., what forms of ride sharing are allowed), micromobility rules (e.g., are e-scooters allowed in cycle lanes), VRU rules (e.g., is the sidewalk closed to pedestrians), dynamic rules (e.g., variable speed limits, lane control signals), public transport use rules (e.g., does my ticket qualify me for a transfer, what are the fare zones), lane use rules (e.g., bike only, bus only, HOV-2), delivery robot rules (e.g., what is the maximum speed for a delivery robot for this sidewalk), road work rules (e.g., speed limit for the work zone). METR is intended to be flexible enough to address all of the transport rules, these are just a few examples that demonstrate the breadth of the effort.

Importantly, in order to cover all rules, the scope must include rules that can change

or be imposed in a dynamic fashion. For example, temporary lane closures due to unplanned incidents and signal timing information need to be considered and handled in a trustworthy way, even when long-range communications may not be available. Thus, the full scope of METR will likely need to rely on both cloud based delivery mechanisms as well as local broadcast of exceptional data.



METR ROLES

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Now let's take a look at the roles defined within the METR system.

METR Roles and Responsibilities

Role	Responsibilities
Regulator	Creates, manages, and posts rules through traffic control devices
Translator	Converts rules for a defined scope into a trustworthy electronic format
Collector	Collects rules from all relevant translators for a defined scope; may package rules for efficient exchange; provides the rules to disseminators
Disseminator	Collects rules from one or more collectors; may (re)package rules for efficiency; distributes rules to (many) end users
User	Follow the information contained in the rules

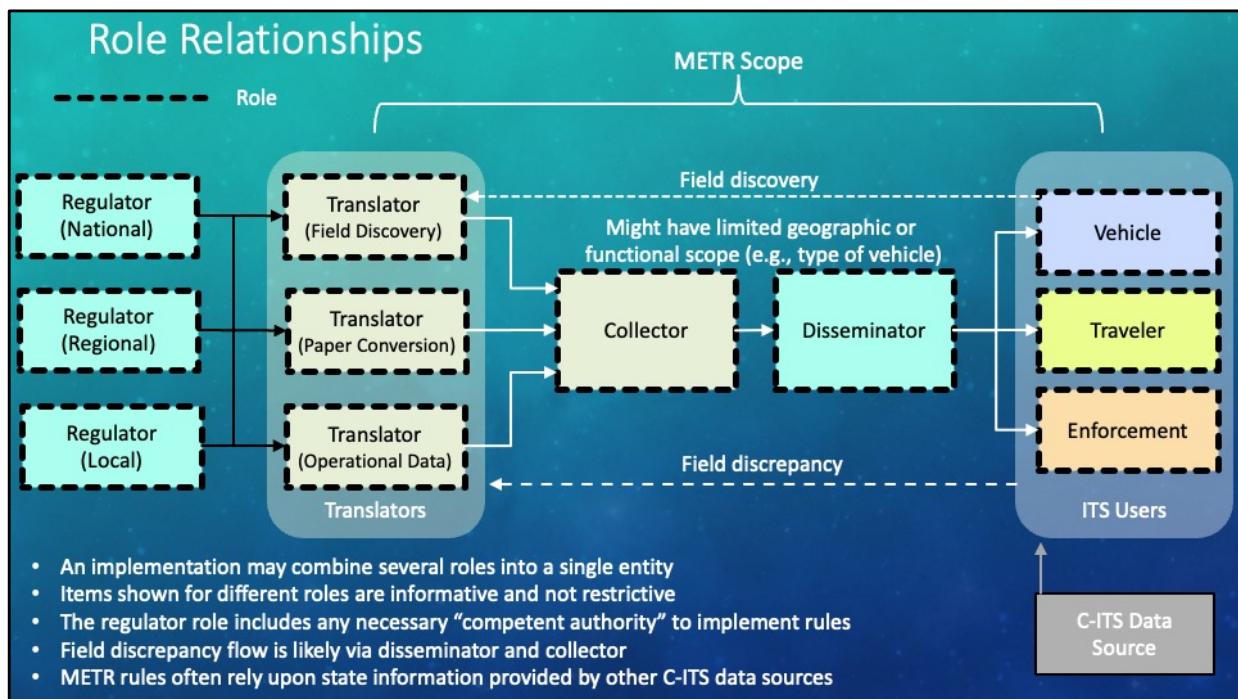
A single entity may perform multiple roles and/or a portion of a role. For example:

- The regulator role might be performed by the combination of a regulatory body that creates the rule and a competent authority that posts the rule. Alternatively, the regulator role might be performed by the same entity that performs the translator role.

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This table identifies the five major roles that we envision within METR. It should be noted that METR is a system of systems. A component system may perform one or more of the identified roles and it is likely that different geographical regions will adopt different models. Some ideas of what these models might look like will be provided in the ConOps, but for now, we look at the system generically based on these role divisions.



This image provides a little more context to the roles identified on the previous slide by introducing the major relationships. The regulators (largely) operate outside of the METR process; they establish the rules of the road and METR provides one mechanism to publicize these rules. For any location, there will typically be multiple jurisdictional entities – and each jurisdictional entity (e.g., city) might have several regulators (e.g., city council, road authority, police officer). In some cases, the regulator role will be supported by a competent authority that has the legal authority to implement the rules once enacted. Within this diagram, the competent authority is included in the regulator box and is outside the scope of METR itself.

Once the rules have been established, they need to be converted into the approved electronic format; this is the job of the translator. Three major types of translators have been identified. For rules that are defined in real-time (e.g., variable speed limits, lane control signals), the translation may be included in the system where the rule is entered (e.g., the Traffic Management Centre might simultaneously electronically notify METR as it is posting a new variable speed limit for a section of road). Other rules are likely to be produced by processes that do not directly provide an electronic feed. In this case, a translator will be required to perform a manual translation of the (e.g., paper) rule into electronic format. Finally, in order to minimize

the amount of manual translation, some systems might allow for systems to discover posted rules in the field and to provide that information back to a translator. This mode might be especially useful during initial population of the METR database.

Once the data exists (somewhere) in electronic form, the collector role is responsible for gathering all of the information for the particular use cases that it claims to support. For example, a collector might have a limited geographic scope and/or set of user systems that it supports.

The disseminator is responsible for collecting data from a collector and disseminating it to the user systems. Once again, a disseminator might have limited geographic scope and/or user types.

User systems are responsible for connecting to disseminators and obtaining rules per their agreement.

Finally, some rules are dependent upon or supplemented with real-time, cooperative-ITS data (i.e., real-time data that is shared and can be used for multiple applications). METR is responsible for providing rules, which can be reliably advertised to travellers in advance of their arrival at a location. C-ITS data includes additional real-time information that can activate, modify, or otherwise alter the practical effects of known rules. For example,

1. METR provides rules that define how traffic signals work within a jurisdictional area; C-ITS data provides the current state of each traffic signal.
2. METR might require road vehicles to give way to emergency vehicles responding to an incident; C-ITS data sent by emergency vehicles can alert other vehicles in its vicinity that the rule is active
3. METR might require the use of headlights in the rain; C-ITS data can inform the vehicle that it is currently raining and the rule is active.

The definition of METR rules will often need to explicitly indicate their relationship with C-ITS data.

In addition, there are two potential return flows that have been identified. The first is from specialized vehicles that are designed to detect traffic control devices in the field and to report these directly to a specific translator as a means of efficiently entering the rules into the METR system. It is envisioned that this might be a more efficient mechanism for loading all of the rules into METR than manually entering all rules by hand; however, at the present time it is somewhat unclear if this flow needs to be standardized. The other return flow is similar, but more generic. It is envisioned that any user system equipped with sensors might be able to detect conflicts between the electronic rules it has received and the traffic control devices it detects

(e.g., perhaps a missing stop sign or a stop sign where none is reported). When such conflicts are identified, the user system should notify translators so that the conflict can be investigated and the electronic and physical rules can be brought into alignment. However, the user system likely does not know the translator who provides this data; as such, the data will likely be routed through the disseminator and collector so that it can reach the correct translator. As this is an interface that needs to be supported by multiple user systems that are developed and managed by separate entities, a standardized interface will be needed.

It is important to note that these are just roles; specific implementations might group several roles into one system.

Are there any questions or concerns about this proposed structure?



ELECTRONIC REGULATIONS

LIFECYCLE

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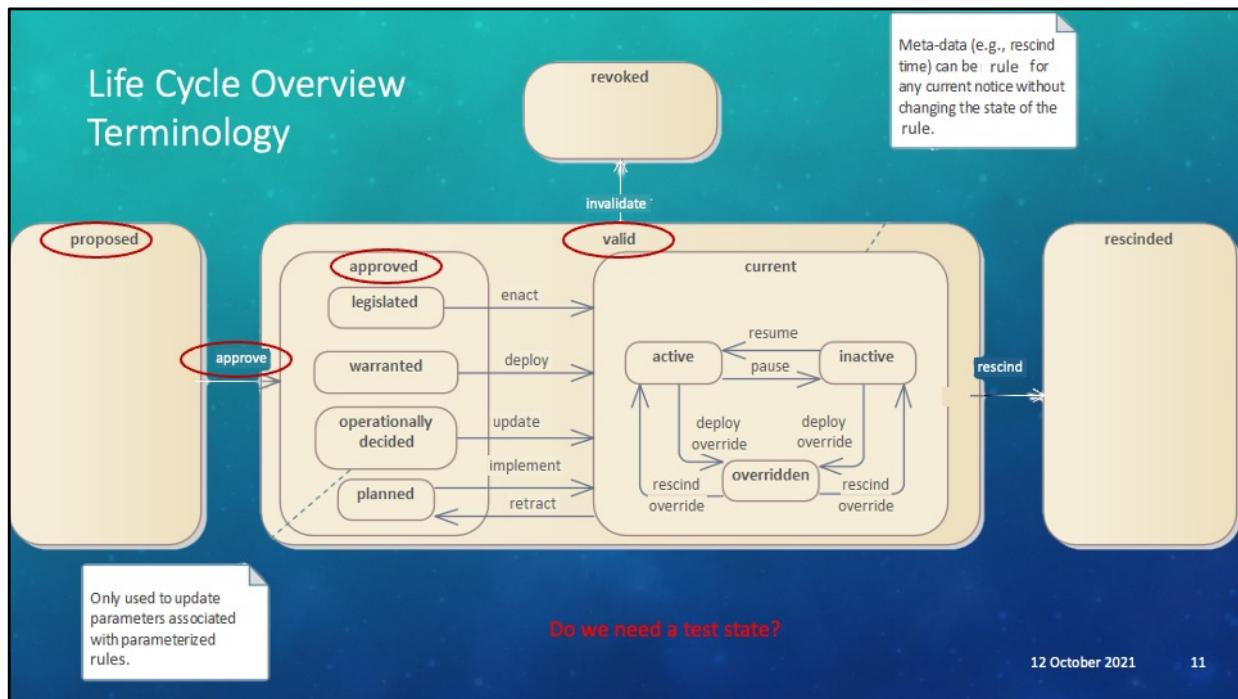
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Now let's take a closer look at the electronic regulations (and advisories and guidance)

What is the Regulatory Lifecycle?



All rules go through a lifecycle, which we believe can be defined in the four stages shown in this slide. Rules are proposed and are eventually approved. While in the approved state, they can be digitized into the METR system and publicized. At some point, the rules become current, whereupon warnings and enforcement actions can commence. Finally, at some point, rules might be rescinded (or otherwise taken out of service)



This process can be formalized a bit more using a state-machine diagram, in this case, adding some more details. One of the primary reasons for showing this diagram is to try to build consensus on the terminology that we will use in our ConOps.

Once a proposed rule is approved, it transitions to the approve state, which is a type of a “valid” state. Approved rules come in four distinct types:

Might want to consider a test state for agencies to verify their entered data prior to making live

Approved State



- Approved by an entity with recognized jurisdiction; not yet implemented
 - Legislated: Rule is “enacted” without the use of traffic control devices
 - Update to the vehicle code
 - Warranted: Rule that will be “deployed” using traffic control devices
 - Static speed limit, a variable speed limit system (but not the real-time speed limits)
 - Operationally decided: Rule that “updates” the intent of a previous rule
 - A real-time speed limit to be posted on a variable speed limit sign already deployed
 - Planned: Rule that can be repeatedly “implemented” and “retracted” through the deployment and recovery of traffic control devices
 - Emergency response plan
 - Daily deployment of cones near a work zone
- Example entities “with recognized jurisdiction”
 - Definition of the vehicle code: legislative body
 - Static speed limit: Road authority
 - Dynamic speed limit: Road operator

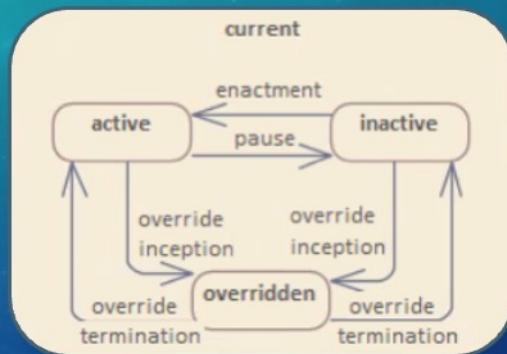
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Approved rules come in four distinct types, as described on this slide.

Current State

- Rules can be overridden by other rules, for example:
 - Emergency response plan can change the travel direction on a freeway
- Current rules can be inactive
 - A parking restriction might be inactive on weekends



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Once a rule is “enacted”, “deployed”, “updated”, or “implemented”, it becomes “current”. For example, a parking restriction related to construction activities might be approved to apply from 06:00 to 18:00 local time from Monday through Friday from July 1 to July 31. However, the rule might be publicized starting the month of June. During the month of June, the rule would be “approved”; not “current”. At midnight on July 1, the rule would become “current”, but “inactive” and at 06:00, the rule would become “active” assuming July 1 falls on one of the days for which the rule can be active.

The third possible state of a current rule is overridden. Most defined rules can be overridden in special cases, although some are more common than others. For example, a Signal Phase and Timing message might indicate that a vehicle can enter an intersection, but an approaching emergency vehicle responding to a call might override this permission. Likewise, evacuation plans might re-route traffic onto what is normally opposing traffic lanes; when this occurs, vehicles need to be aware which roadway markings and signage are overridden (e.g., in the US, the yellow pavement marking will be on the wrong side and will be in an overridden state..

Is this a Valid Depiction of the Regulatory Life Cycle?

- Accepting that terminology may vary across jurisdictions:
 - Are there any fundamental aspects that are wrong?
 - Are there any fundamental aspects that are missing?

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Are there any questions, comments, or concerns about this terminology?



LIFE CYCLE DETAILS

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Now let's investigate the details a bit closer for each of the four types of rules.

Legislated Rule Processes

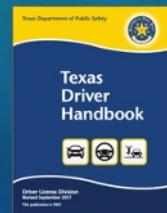
Implementing

- Rule is approved by jurisdictional entity (e.g., legislature)
- Approval is published (e.g., in newspapers) with an effective date
- Rule becomes current (typically active) on effective date

Rescinding

- Jurisdictional entity approves rescinding the rule
- Rescindment is published (e.g., in newspapers) with an effective date
- Rule becomes rescinded on effective date

- Any comments on the proposed process?



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Legislated rules tend to be known well in advance and can therefore be publicized via METR to all subscribers prior to their activation. Legislated rules cover any rule that is not publicized with traffic control devices.

Texas Driver Handbook - <http://dps.texas.gov/internetforms/forms/dl-7.pdf>

Process to Implement a Warranted Rule

Implementing

- Jurisdictional entity (e.g., road authority) determines that warrants are met to justify a rule
- Order is issued to deploy a traffic control device
- Crew is scheduled to install device
- Crew installs device
- Rule becomes current when device is installed (and associated facility is open to traffic)
 - Implies dynamic coordination between METR and installation process
 - Proposed to be done via C-ITS data until activation of rule can be definitively distributed via METR
- Any comments on the proposed process?



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Warranted rules cover rules that are typically established by traffic engineers based on engineering principles. As these rules require publicising through the deployment of traffic control devices, a period of time is typically required to schedule crews and deploy the devices, which provides ample time for METR to publicize the rules prior to their activation.

However, there will be a need to coordinate the timing of the implementation of the traffic control device in the field and the activation of the electronic rule. How should this be done?

Stop -

https://upload.wikimedia.org/wikipedia/commons/thumb/7/7b/Canada_Stop_sign.svg/1024px-Canada_Stop_sign.svg.png

50 -

https://upload.wikimedia.org/wikipedia/commons/thumb/7/7b/Mauritius_Road_Signs_-_Prohibitory_Sign_-_Speed_limit_50.svg/600px-Mauritius_Road_Signs_-_Prohibitory_Sign_-_Speed_limit_50.svg.png

Traffic Signal - https://cdn.pixabay.com/photo/2017/12/12/17/59/traffic-sign-3015225_960_720.png

No Parking - https://live.staticflickr.com/78/174964332_93e39b13d3_b.jpg

Temporary Closure -

<https://resources.stuff.co.nz/content/dam/images/1/4/t/a/6/m/image.related.StuffLandscapeSixteenByNine.620x349.14t9ts.png/1431567652106.jpg>

Process to Rescind a Warranted Rule

Rescinding

- Jurisdictional entity (e.g., road authority) determines that warrants are no longer met for the rule
- Order is issued to remove traffic control device
- Crew is scheduled to remove device
- Crew removes device
- Rule is rescinded upon removal of the device (and associated facility is open to traffic)
- Any comments on the proposed process?



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Rescinding a warranted rule should follow a similar process

Stop -

https://upload.wikimedia.org/wikipedia/commons/thumb/7/7b/Canada_Stop_sign.svg/1024px-Canada_Stop_sign.svg.png

50 -

https://upload.wikimedia.org/wikipedia/commons/thumb/7/7b/Mauritius_Road_Signs_-_Prohibitory_Sign_-_Speed_limit_50.svg/600px-Mauritius_Road_Signs_-_Prohibitory_Sign_-_Speed_limit_50.svg.png

Traffic Signal - https://cdn.pixabay.com/photo/2017/12/12/17/59/traffic-sign-3015225_960_720.png

No Parking - https://live.staticflickr.com/78/174964332_93e39b13d3_b.jpg

Temporary Closure -

<https://resources.stuff.co.nz/content/dam/images/1/4/t/a/6/m/image.related.StuffLandscapeSixteenByNine.620x349.14t9ts.png/1431567652106.jpg>

Operationally-Decided Rule



Operationally decided rules can be changed an instant prior to a vehicle entering the location where the rule applies.

Variable Speed -

https://s0.geograph.org.uk/geophotos/04/79/06/4790652_f68f32f3.jpg

Lane Control Signs -

[https://upload.wikimedia.org/wikipedia/commons/thumb/1/18/Traffic-signs-manual-chapter-3-figure_18-1_\(2008\).svg/1136px-Traffic-signs-manual-chapter-3-figure_18-1_\(2008\).svg.png](https://upload.wikimedia.org/wikipedia/commons/thumb/1/18/Traffic-signs-manual-chapter-3-figure_18-1_(2008).svg/1136px-Traffic-signs-manual-chapter-3-figure_18-1_(2008).svg.png)

Arrow Lights - NCC - <https://lanelight.com/products/lane-guidance-systems/>

Dynamic Dual Left Turn - <https://vimeo.com/380487472>

Express Toll - https://upload.wikimedia.org/wikipedia/commons/thumb/5/5b/I-15_Express_Lanes.jpg/800px-I-15_Express_Lanes.jpg

Operationally-Decided Rule Process

Implementing

- Jurisdictional entity (e.g., road operator) approves the update of a rule
- Update order is executed (e.g., field device is electronically updated)
- Rule becomes current when control is updated
 - Rule updates must be provided via C-ITS data
 - Updates may also be distributed centrally in an informative basis for navigation and other purposes

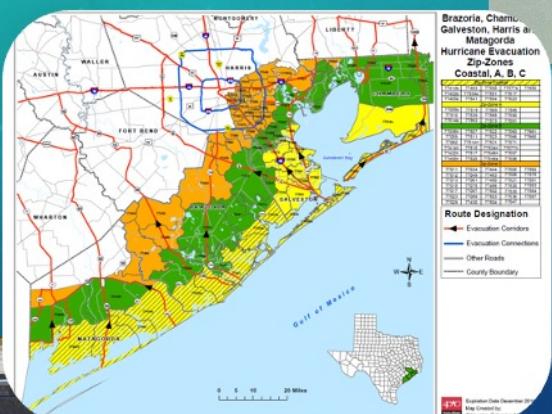
Rescinding

- Operationally-decided rules are not rescinded; the rule is either updated again or the parent rule is rescinded
- Any comments on the proposed process?

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As “operationally decided rules” can theoretically be changed the instant before a vehicle needs to apply them; the rules are better classified as “C-ITS data”. In other words, the actual rule is the parent rule that says a variable rule applies at this location – the C-ITS data then supplements the rule with real-time information. That real-time information should be distributed to all interested parties without constraints in a manner that provides high confidence that all users are informed in a timely manner to the extent necessary to ensure safe operations.

Planned Rule



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The final type of rule that we identified was the planned rule. Planned rules include long-standing schedules of changes to traffic control devices (e.g., movable barriers), deployment of road work zones, and complex, large-scale evacuation plans.

Road Zipper - <https://www.lindsay.com/apac/en/infrastructure/brands/road-zipper/>
Houston-Galveston Area Council Evacuation Map -
<https://i1.wp.com/vatul.net/blog/wp-content/uploads/2011/06/2011-HC-hurricane-evac.png?ssl=1>
Cones - http://ahmct.ucdavis.edu/wp-content/uploads/wuploads/project01_cones1.jpg

Process to Implement a Planned Rule

Preparing

- Jurisdictional entity (e.g., road maintenance authority or emergency operations department) identifies need to support a planned response
- Order might be issued to deploy supporting traffic control devices , for example:
 - Signs indicating an evacuation route
 - Connector ramps as needed to reverse flow of lanes
 - Variable message signs
- Crews install any supporting devices

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The general process to implement a planned rule is a little more involved than for the other rules. The planning effort often is rather extensive and entails overriding multiple “normal” rules in order to achieve a particular objective – often, many or all of the rules impacted by the plan must be overridden for the plan to achieve its full effect.

Once the plan is approved, traffic control devices are often deployed to enable its implementation when needed. Some of these devices might be general purpose (e.g., variable message signs) while others are very specific to the plan (e.g., connector ramps).

Once the traffic control devices are deployed, operators have the ability to implement the plan – but the plan is typically only implemented due to specific conditions, and in cases may never or seldom occur. Further, in some cases, the plans may be activated on a rigidly defined schedule (e.g., stated hours); others might be activated based on field conditions (e.g., actual movement of a moveable barrier) and some might be activated on reasonably short notice (e.g., evacuation plans).

Process to Implement a Planned Notice

Implementing

- Jurisdictional entity decides to make the planned rule(s) “current”
- Order is issued to implement controls (e.g., deploy temporary signs, control field device)
- Control activated (e.g., crews deploy, variable messages activated)
- Rule becomes current when controls are visible to users
- Will require coordination between METR and C-ITS data
- Any comments on the proposed process?

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Sometimes, when rules are activated with short notice, there is some idea that the activation might be needed. For example, wild fire and hurricane evacuations are often the subject of speculation well before they are activated. Other times, plans are activated with little notice (e.g., tsunami).

Publicising such rules will require the coordination of METR and C-ITS data (e.g., perhaps a short announcement via C-ITS data that a particular plan is in effect coupled with METR to distribute details)

Process to Retract a Planned Rule

Retracting

- Jurisdictional entity decides to retract the planned rule(s)
- Order is issued to retract controls (e.g., remove temporary signs or control field device)
- Retract control devices (e.g., crews remove, variable messages de-activated)
- Rule reverts to “approved” when controls are no longer visible to users
- Any comments on the proposed process?

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The process to retract a planned rule would follow a similar process

Revocation

- Rescind: cancel a valid rule
 - A normal process
 - Typically provided with advance notice
 - Does not change the applicability of the rule when it was active
- Revoke: announce that a rule was never valid
 - An exceptional process
 - E.g., Court system decrees the rule to be invalid
 - No advance notice
 - Might be retroactive (i.e., any associated enforcement is nullified)

Process

- Jurisdictional entity (e.g., court) invalidates rule
- Rule transitions to "revoked"
- If based on traffic control devices, orders are issued to remove
- Crews remove any traffic control devices

NOTE: Status changes before traffic control devices are removed



* In theory, a higher court could reverse a lower court's decision to revoke and there could be a subsequent "reinstate" transition

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Another, relatively rare, case that needs to be considered is the case that a rule is revoked. Revocation is a special case in that the advertised rule is deemed to be immediately invalid, even before it was advertised.

In practice, METR will have to implement this after the fact, but it is likely that METR can be more responsive than the removal of traffic control devices.

Scales -

https://upload.wikimedia.org/wikipedia/commons/thumb/f/fa/Balanced_scale_of_Justice.svg/1600px-Balanced_scale_of_Justice.svg.png

Other Transitions

Does the ConOps need to discuss any details about :

- Approving rules (e.g., the legislative or warrant process)
- Rescinding rules that are planned (i.e., they should be retracted first)
- Rescinding operationally-decided rules (i.e., they should be updated)

As a final check, does the ConOps need to mention anything about these details of the rule lifecycle?

Termination Notification

- Does a user need to be informed when rules are rescinded, retracted, or invalidated (i.e., no longer current)?
- Does a user need to be informed when rules are paused or overridden (i.e., current but no longer active)?
- If yes, to either, does the system need to centrally provide non-repudiation to demonstrate that each user was informed?
- Does the user device need to provide non-repudiation that rule was received



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When rules terminate, do users need to be informed. We assume that they need to be informed in a similar fashion to all other rules (e.g., via METR or C-ITS data depending on the type of rule)

Parking Sign - <http://www.pngall.com/wp-content/uploads/2/Parking-Only-Sign-PNG-High-Quality-Image.png>

No - https://cdn.pixabay.com/photo/2012/04/24/12/29/no-symbol-39767_960_720.png

Car - <http://www.pngall.com/wp-content/uploads/2016/03/Subaru-Free-PNG-Image.png>

Radio Waves - https://cdn.pixabay.com/photo/2014/03/25/16/27/radio-297183_960_720.png

Cell Tower - https://cdn.pixabay.com/photo/2012/04/12/20/39/cell-tower-30565_640.png



OTHER CONSIDERATIONS

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Now we'll consider some other considerations

Responsibilities

Are there any concerns with the following statements of responsibility? Do these responsibilities change by jurisdiction (e.g., regions of the world)?

- Each translator is responsible for proving what rules were sent to each collector
- Each collector is responsible for proving what rules were sent to each disseminator
- Each user is responsible for obtaining its required rules from disseminator(s)
- Each user is responsible for proving what rules were obtained and when
- Each disseminator is responsible for allowing a user to verify that it has received all requested rules
- User requests for rules should be pseudo-anonymous

RESPONSIBILITY



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Are there any concerns with the assertions made on this slide regarding responsibilities?

<https://www.thebluediamondgallery.com/handwriting/images/responsibility.jpg>

Rule Characteristics

What limiting characteristics might be associated with a rule?

- Location/geofence/jurisdiction
- Schedule/hours of applicability
- Fuzzy time (e.g., "after dusk", "when workers present", "on holidays")
- Vehicle classification
- Road classification
- Personnel classification (e.g., "military personnel only", driver's license, number of occupants, personnel under circumstances – emergency vehicle responding)
- Goods classification (e.g., "dangerous goods")
- Purpose (e.g., loading)
- Permit/placard/Designated service vehicle
- Vehicle characteristics (weight, width, etc)
- Trailers
- Fuel type/emissions
- Weather/environmental (e.g., lower speed limits when raining)
- Rules based on meta-conditions (e.g., rule applies when there is a elevated terrorist threat level)
- Vehicle equipment (e.g., toll tag, snow chains, flat bottomed boat)
- Other?

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What characteristics need to be considered when we define rules for METR? Are there existing definitions that we should identify in the ConOps for future efforts to consider when they consider designing the METR interfaces?

Condition-Based Rules

Should METR indicate when condition-based rules are active so that users and enforcers have confirmation whether a rule is currently in force?

- “when workers present”, “when pedestrians present”
- “when raining”
- “when flashing” (e.g., “on school days”)
- “on holidays”
- “when train approaching”



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To what extent should METR advertise conditions related to rules applying. For example, how should METR provide an unambiguous indication that a lower speed limit is in force due to workers being present?

Pedestrian - <https://freesvg.org/img/1541128793.png>

Workers - https://live.staticflickr.com/1124/1162798345_b7f54db233_b.jpg

Evacuation Plan

How should large scale plans be handled for efficient activation?

- Digitize when being activated
- Digitize in advance; distribute to disseminators when activated
- Digitize and distribute to disseminators in advance; distribute to users when activated
- Digitize and distribute to users in advance; activate when needed?



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Should evacuation plans be downloaded or be available for download to METR users in advance/always? Or should these plans only be distributed prior to their activation?

Hurricane -

https://upload.wikimedia.org/wikipedia/commons/thumb/5/5b/Hurricane_Evacuation_Route.jpg/1280px-Hurricane_Evacuation_Route.jpg

Volcano - https://live.staticflickr.com/2715/4519291766_34b1bbdc29_b.jpg

Tsunami - https://live.staticflickr.com/3231/2991082591_a53a7d25e0_b.jpg

Wildfire - <https://images.smartsign.com/img/lg/K/wildfire-evacuation-route-upper-right-arrow-sign-k2-4401-ur.png>



NEXT STEPS

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This completes workshop 3.

Workshop Schedule

Date	Topic
28 September	METR operations
5 October	METR operational structure
12 October	Electronic regulation life cycle
19 October	Electronic regulation conflicts
26 October	Vehicle operations
2 November	Vehicle information needs
9 November	Campus governance
16 November	Campus regulations
23 November	Roadwork and emergency operations
30 November	Multimodal and micromobility operations
7 December	Local engagement
14 December	Legal issues

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We've now completed 3 of our 12 workshops. Our next workshop will discuss what to do when there are apparent conflicts between rules.

Workshop 4 Topics

- **Electronic Regulation Conflicts**
 - Conflicts and enforcement
 - Reporting conflicts
 - Responses to reported conflicts
 - Validity period of downloaded rules

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The workshop will focus on the topics shown on this slide

Tentative Schedule



- End of task shown at expected committee draft
- Transparent bar shows standards review and approval process
- System architecture is expected to be online only (i.e., it will use a shorter review process)
- Interface specification are expected to enhance existing standards

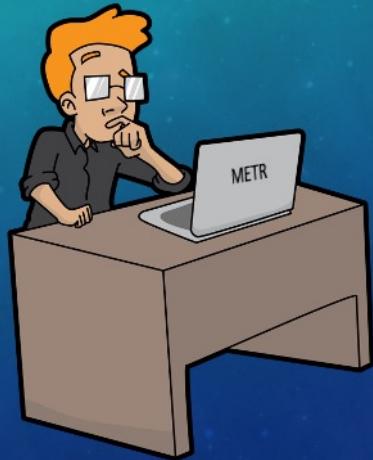
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As a reminder our current expected timeline is shown here. We hope to have a ConOps draft in early 2022, whereupon it will start the standardization process (of multiple reviews prior to standardization)

More Information

More information and a discussion forum is available at:

<https://iso-tc204.github.io/iso24315p1>



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More information about the project and the latest developments will be posted on our GitHub site. This will include a PDF of weekly presentation files to be posted after our meetings each week.

https://upload.wikimedia.org/wikipedia/commons/thumb/2/24/Cartoon_Guy_In_Deep_Thought_Using_A_Computer.svg/1200px-Cartoon_Guy_In_Deep_Thought_Using_A_Computer.svg.png