NIE_023_NIP_in_Cluster

**Next Instruction Panel
NIP**

	47 km
	Hôtel Le Chat Noir
↗ 800 m	A27 E311
	Brooklyn-Qns Expwy Staten Islands
↑ ↑ ↑ ↑ ↗ ↗	
🚗 90 m	
▲ Light traffic, no delay	

PIC: Example of Next Instruction Panel in the context of Horizon Panel.

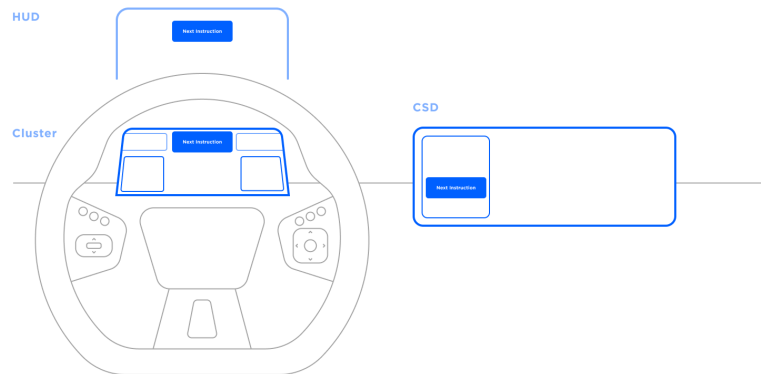| **Interaction Designer**	Alexey Opokin
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Visual Design Specification	www.figma.com

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Definition

Visual Instruction (also known as NIP-Next Instruction Panel) is a UI component that is used to visualise Instruction in order to provide Guidance for a driver. Guidance is a complex experience consists of visual instruction, Audio instruction, Map with representation of the route on it and various other elements. Audio and Visual Instructions change in time as vehicle progresses to the manoeuvre point. This logic is described in details in this document: Instruction Triggering Logic.
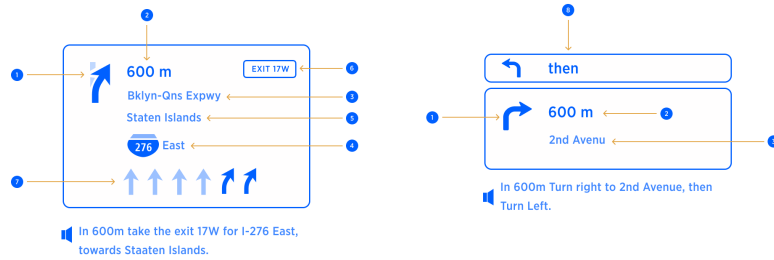
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UI Touchpoints

Visual instruction is represented at following touch point in a car: HUD, Cluster Display, Central unit display. Each of those touch points have different visual design of the NIP and layout. For now we describe only CSD touch point.

Components of Visual Instruction (NIP)

In 600m take the exit 17W for I-276 East, towards Staaten Islands.

In 600m Turn right to 2nd Avenue, then Turn Left.

	Item	Context	Mandatory	Occurence	Description
1	Next Instruction schematic image (Manoeuvre arrow)	any	yes	Single	Graphical image representing next manoeuvre schematically
2	Distance to next instruction	not applicable for some special instructions	yes	Single	Distance to point of main manoeuvre. Distance units follow special formatting rules described here: G_008 Distance and Time Notation#Distanceformatting

	Item	Context	Mandatory	Occurence	Description
3	Road Name Representation of Directional Information	any	No	Single	**Road name** (part of Directional info) is a road driver will continue on after completing manoeuvre. There are two use cases here that need to be separated: 1. **Signpost** is not available for the manoeuvre. In this case Road name is taken from map data as a name of a road manoeuvre leads to. NOTE: Only significant roads should be selected. Connecting road links should not be mentioned. 2. **Signpost** is available. In this case Road name

	Item	Context	Mandatory	Occurence	Description
4	Road Number Representation of Directional Information	any	No	Multiple	**Road number** (part of Directional info) is a number assigned to a road and usually corresponds to the Road name above. Visually road numbers represented as graphical shapes which vary by location and the number inside. Sometimes Road numbers have direction (East) attached to them. Some roads have both: Road name and Road numbers, some only road names and some only road numbers. There are two use cases here that need to be

	Item	Context	Mandatory	Occurence	Description
5	Towards Information	any	No	Single	An area/city TOWARDS which the user will be heading after the manoeuvre.

This information is taken from Signpost. If multiple Towards are provided there, we should show the one that Route goes through and ignore others.

NDS DATA NDS DATA ISSUE Currently in NDS data, **Road names/numbers** sometimes provided as **Towards** information. This seems to be incorrect and needs to be clarified with NDS. For now, we provide |

	Item	Context	Mandatory	Occurence	Description
6	Exit Numbers	Highways only	No	Multiple	**Exit Number** is a method by which exits are identified on roads in most areas. must match the real-world sign information Could contain an array of numbers with or without cardinal direction information (i.e. Sout-East) EXCEPTION In some areas (California and Russia are known to have such logic) exit numbers are not used always or not used at all. Instead to identify the exit they use Towards or Directional information.

|	Item	Context	Mandatory	Occurence	Description
7	Lane guidance	on multi-lane roads	No	Single	Graphical image representing lane structure at the point of next manoeuvre
8	Chain Instruction	any	No	Single	Is used where another manoeuvre occurs very soon after the main manoeuvre.

Cluster Display

Description

Following the Cluster vision reference , the Next instruction panel, as part of the cluster display, should be able to easily adapt and scale to the different OEM layouts without compromising usability and the core concepts.

As a part of the system described above, the cluster NIP should be **adaptable, flexible but focused, glanceable, simplified, not distracting and easy to read.**

NIP Prioritisation
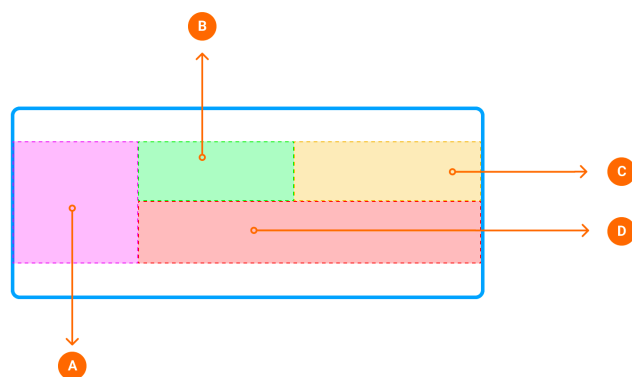
	Item	Context	Permanent?	Priority	Comments
A	Next Instruction schematic image (Manoeuvre arrow)	any	yes	1.	Graphical image representing next manoeuvre schematically. This information is key and will always be displayed on the NIP whatever the size of it.

	Item	Context	Permanent?	Priority	Comments
B	Distance to next instruction	not applicable for some special instructions	yes	1.	Distance to point of main manoeuvre. Distance units follow special formatting rules described here: G_008 Distance and Time Notation#Distanceformatting This information is key and will always be displayed on the NIP whatever the size of it. However, it position might differ from top aligned (most of the use cases) to center aligned (small NIP area/ split screen) regarding the size of the NIP area.

	Item	Context	Permanent?	Priority	Comments
C	Exit Numbers	highways only	No	2.	This is the most important element on Highway's scenario. The exit number will be prioritised on top of the road number / shields, in case there is no room for both.

	Item	Context	Permanent?	Priority	Comments
D	i. Road Name	any	No	3.	Road names, in a built-up area scenario will only be displayed if the NIP area is big enough. In case of a long road names (two lines) or if the NIP area is small (PSA, split screen), the NIP will focus on the manoeuvre arrow and on the distance to direction only.
D	ii. Road Shields/ Number	any	No	3.	Road shields / number will not be visible on the smallest NIP area. However, it will be in the rest.

NIP Configurability

Font size

Eye Distance (cm)	**Example**
800 Pitch 0.132 (wide)	
1000 Pitch 0.132 (wide)	

Adaptiveness

These buckets are a representation of the panel of our Cluster's NIP areas based on our various clients. They **DO NOT** represent all of our clients NIP area / Cluster sizes but sum up the extreme use cases, in order for us to align our vision and design an adaptive and flexible NIP accordingly.
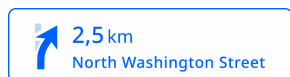

| **Simple Navigation Example**	**Motorways Example**	**Notes**

This is PSA 7" cluster. Potentially the smallest NIP area.
In that case, we do not have the room for the road name and center the distance with the arrow manoeuvre. In motorways scenario, the exit number is prioritised over the road number.


In the Maserati Cluster scenario, the road name can be displayed on one lign.
In case this is too long, it will be fade out.
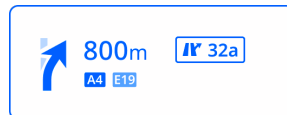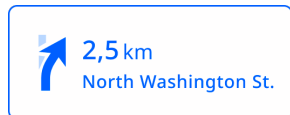
Similar to the Maserati NIP area, this PSA ultra wide Cluster, will display the road name as long as it fits, on one lign.
In the motorways scenario, the exit number will be next to the distance with the road numbers right below, as designed in the original layout.

The split screen scenario make it difficult to keep the road name within the built up area scenario. In that case, we focus on the distance only, horizontally centred with the manoeuvre arrow. The road numbers will be right below that arrow on the mortorways.
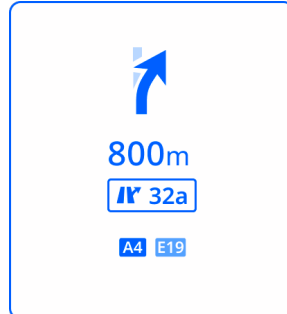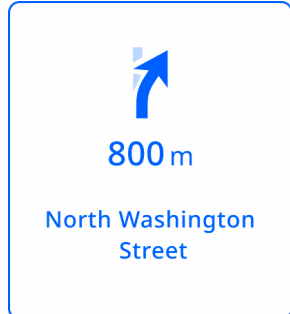
In the biggest NIP area from Stelantis, in order to use as much room as possible, the elements center aligned vertically inside the NIP by prioritisation order.

Prototype example

https://github.com/user-attachments/assets/3310f3ea-4faf-4610-89ae-eb6c002f971b