

Font Bureau/Type Network-
Vaiaable Fonts background
material

An introduction to Roboto Extremo project plan
finds Roboto Extremo described as a continuation
of work done to begin the development of
variable versions of Roboto, and research by Font
Bureau on other fonts.

Brochures; [typenetwork.com/brochure/opentype-
font-variations/](http://typenetwork.com/brochure/opentype-font-variations/)

On Decovar; [www.typenetwork.com/brochure/
decovar-a-decorative-variable-font-by-david-
berlow#?](http://www.typenetwork.com/brochure/decovar-a-decorative-variable-font-by-david-berlow#?)

On Axes proposals;
variationsguide.typenetwork.com

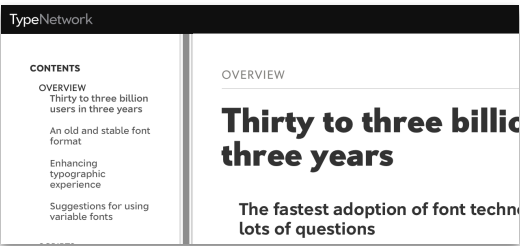
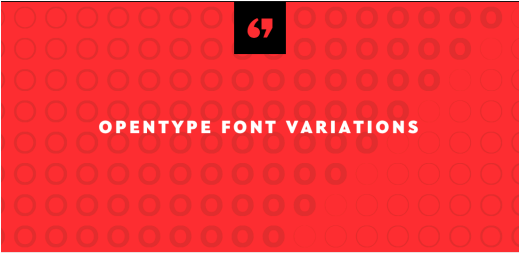
On Amstelvar and Decovar Alpha;
[typenetwork.com/brochure/opentype-variable-
fonts-moving-right-along/](http://typenetwork.com/brochure/opentype-variable-fonts-moving-right-along/)

On AmstelvarAlpha and RobotoDelta;
variablefonts.typenetwork.com

Repositories;
[github.com/TypeNetwork/Opentype-1.8-Axis-
Proposal](https://github.com/TypeNetwork/Opentype-1.8-Axis-Proposal)
github.com/TypeNetwork/Amstelvar
github.com/TypeNetwork/Decovar
github.com/TypeNetwork/AmstelvarAlpha

Proofing tools;
typetools.typenetwork.com
videoproof.typenetwork.com

Variable font background sites



Roboto Ancestors

Background on Roboto “Classic”
The first Roboto variable font was a conglomeration of the .ttfs that
existed into a design space that contained the original styles and
everything in between. The second variable font only contained the
extreme ttfs of Roboto, [2], interpolating the other original styles and
containing the family in a smaller file. This included a slight extension of
the design space, as the original .ttfs were just missing one extreme to
have more complete condensed style in the design space.

github.com/TypeNetwork/Roboto/blob/master/fonts/Roboto-VF.ttf

[github.com/TypeNetwork/Roboto/blob/master/fonts/Roboto-min-
VF_hinted.ttf](https://github.com/TypeNetwork/Roboto/blob/master/fonts/Roboto-min-VF_hinted.ttf)
(This “min” version is currently under development being rehintered by
another party.)

Roboto Delta began the experimentation on a Roboto that went
beyond the original design space of the family. Following the design of
Amstelvar, which contained weight, width, optical size axis and 11
parametric axes, Delta explored how that might apply to a san serif. It
also brought out the need for a web app that allowed testing of basic
variable font typography.

[github.com/TypeNetwork/Roboto-Delta/blob/master/fonts/
RobotoDelta-VF.ttf](https://github.com/TypeNetwork/Roboto-Delta/blob/master/fonts/RobotoDelta-VF.ttf)

typetools.typenetwork.com/family/Roboto-Delta

Roboto Extremo became the current code name for a variable based
on Roboto Regular, with an optical size axes, parametric axes, and
weight and width axes that go as far as the Amstelvar design space, as
applicable to a san serif design.

!"#\$%&'()*+,-./012345678
9:;<=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[\]^_
`abcdefghijklmnopqrstuvwxyz
wxyz{|}~

Font Bureau/Type Network-
Varaible Fonts Project Sheet

Command Sheet –

Bringing together the deliverables (by number in column A), from the service agreement, to a schedule, and acting as the central tracking sheet for links to deliverables in the service agreement in (the circled column G).

docs.google.com/spreadsheets/d/1nECpQuJanbpzR8wT4h0oypOHdoiq0Bl6xFt5OlpPDY/edit#gid=1246227689

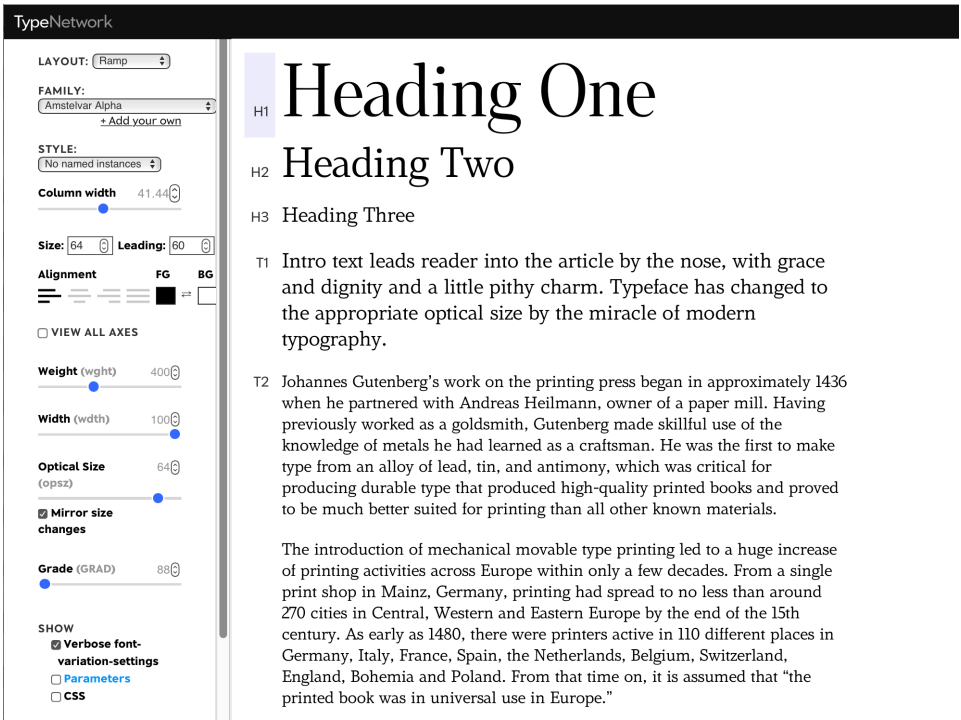
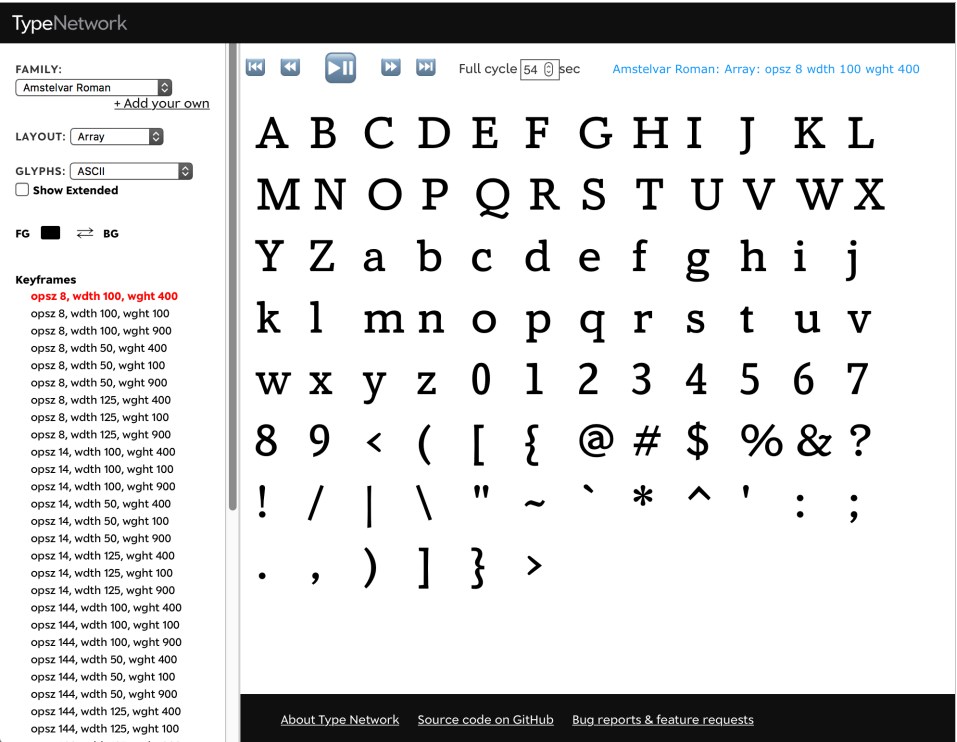
A	B	C	D	E	F	G
	Deliverable Type	Project	Description	Start Date	End Date	Link to deliverable
6.1.1	Project Plan	Roboto	Develop a detailed project plan.	2019-10-15	2019-11-01	tremo/issues/69
6.1.2	Concept	Roboto	Design a concept that extends the Latin design	2019-11-02	2019-11-14	
6.1.3	Presentation	Roboto	Presentation of the project	2019-11-15	2019-11-15	
6.2.1	Prototype	Roboto	Develop a prototype with all letters (28 upper, 28 lower) and numerals (10). Draw the design and build both variable and static binaries with fontmake	2019-11-16	2019-12-05	
6.1.3	Presentation	Roboto	Presentation of the project	2019-12-06	2019-12-07	
6.2.2	Basic	Roboto	Develop fonts with support for the Google Latin Core glyph set. Draw the design and build both variable and static binaries with fontmake. Export and mastering of source and binary files, with OpenType layout features (including kerning, anchor placement, and conjuncts), and quality assurance (QA) testing, for all Languages.	2019-12-08	2020-02-15	
6.1.3	Presentation	Roboto	Presentation of the project	2020-02-16	2020-02-18	
6.3.1	Full	Roboto	Develop fonts with support for the Google Latin Expert glyph set. Draw the design and build both variable and static binaries with fontmake. Export and mastering of source and binary files, with OpenType layout features (including kerning, anchor placement, and conjuncts), and quality assurance (QA) testing, for all Languages.	2020-02-19	2020-03-18	
6.1.3	Presentation	Roboto	Presentation of the project		2020-03-25	
6.4.1	Final	Roboto	Finalize the font family, including with hinting to improve text-rendering on screens	2020-03-26	2020-04-20	
6.5.0	Presentation	Roboto	Presentation of the final project	2020-04-21	2020-05-01	
6.1.1	Project Plan	Amstelvar	Develop a detailed project plan	2019-10-01	2019-10-28	
6.1.2	Concept	Amstelvar	Design a concept that extends the Latin design	Oct 29 2019	Nov 4 2019	
6.1.3	Presentation	Amstelvar	Presentation of the project	2019-11-05	2019-11-11	

Testing tools

During initial variable developments no applications were available to do font testing for QA that then relied on the font tools for all quality. With Safari, Chrome and other browsers quickly adopting variables, FB developed Typetools (@typenetwork.com), to be able to compose text, navigate the design space and have interactive control over lines and blocks of text.

While still useful, the demand typetools placed on text coming from input, and the user experience and patience needed to manually navigate slides or supply numerical input to and between instances of interest within the variable design space, called for a new set of tools. So Videoproof was developed to include the use of more predefined text, the ability to display common subset of glyphs, and the use of video to allow the quick but thorough survey of predefined swaths of variable design space.

In software for Non-interactive use, we've developed a python script that uses a design space file and the index numbers of glyph contour points to generate a sheet containing the parametric values of a design space automatically. And we are working to scale glyph positioning data, (kerning), via python script.



H1 Heading One

H2 Heading Two

H3 Heading Three

- T1 Intro text leads reader into the article by the nose, with grace and dignity and a little pithy charm. Typeface has changed to the appropriate optical size by the miracle of modern typography.

- 12 Johannes Gutenberg's work on the printing press began in approximately 1436 when he partnered with Andreas Heilmann, owner of a paper mill. Having previously worked as a goldsmith, Gutenberg made skillful use of the knowledge of metals he had learned as a craftsman. He was the first to make type from an alloy of lead, tin, and antimony, which was critical for producing durable type that produced high-quality printed books and proved to be much better suited for printing than all other known materials.

The introduction of mechanical movable type printing led to a huge increase of printing activities across Europe within only a few decades. From a single print shop in Mainz, Germany, printing had spread to no less than around 270 cities in Central, Western and Eastern Europe by the end of the 15th century. As early as 1480, there were printers active in 110 different places in Germany, Italy, France, Spain, the Netherlands, Belgium, Switzerland, England, Bohemia and Poland. From that time on, it is assumed that "the printed book was in universal use in Europe."

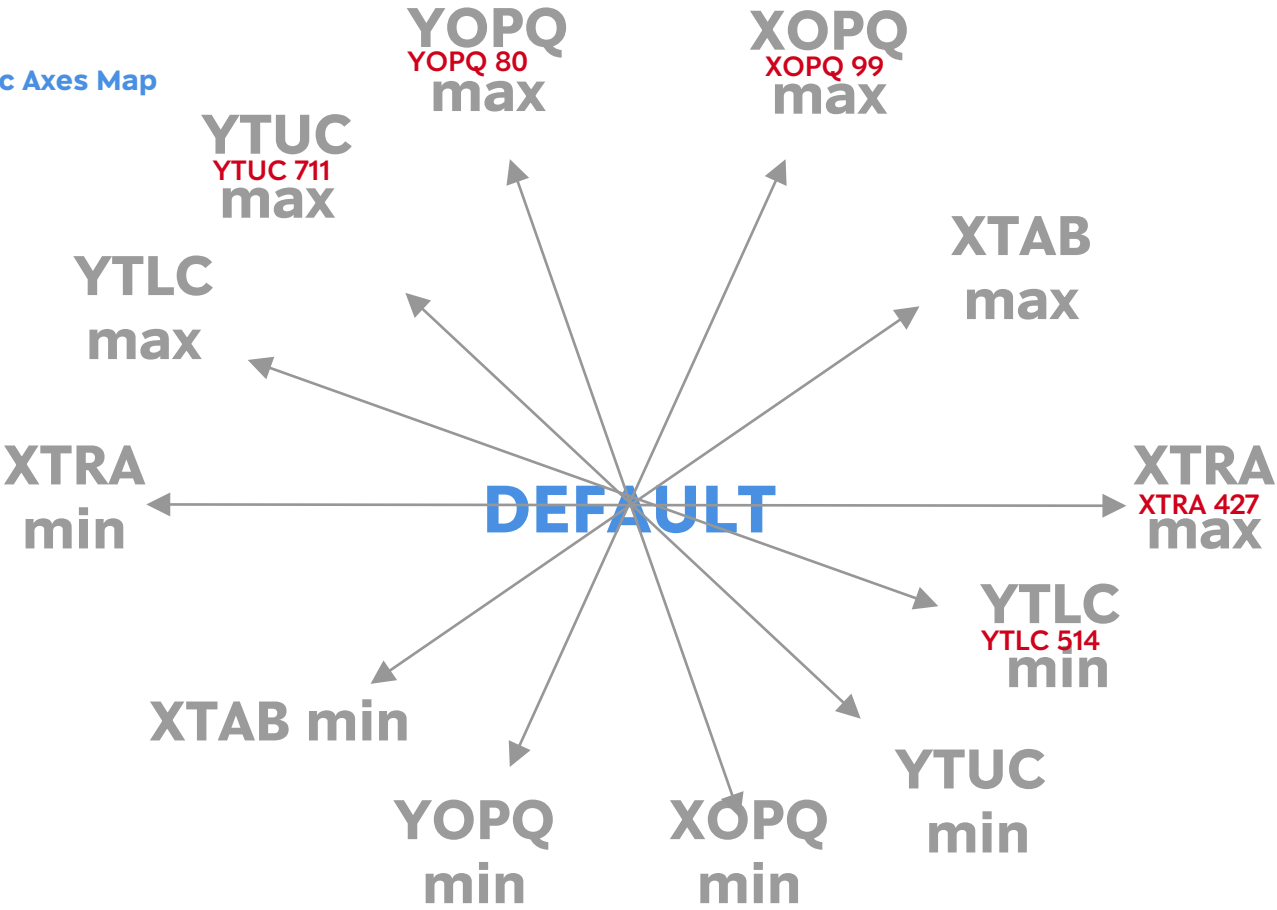
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Source	UPM	XOPQ	XOPQ %	XOUC	XOUC %	XOLC	XOLC %	XOFI	XOFI %	XTRA	XTRA %	XTUC	XTUC %	XTLC	XTLC %
2	RobotoExtremo-Regular.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
3	RobotoExtremo-XTRAmx.ufo		2048	192	94	192	94	0	0		454	222	454	222	444	
4	RobotoExtremo-XTRAmn.ufo		2048	192	94	192	94	0	0		1014	496	1014	496	973	
5	RobotoExtremo-XOPQmn.ufo		2048	54	27	54	27	0	0		734	359	734	359	534	
6	RobotoExtremo-XOPQmx.ufo		2048	350	171	350	171	0	0		734	359	734	359	820	
7	RobotoExtremo-YOPQmn.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
8	RobotoExtremo-YOPQmx.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
9	RobotoExtremo-YTLComn.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
10	RobotoExtremo-YTLComx.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
11	RobotoExtremo-YTLComn.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
12	RobotoExtremo-YTADmn.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
13	RobotoExtremo-YTADmx.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
14	RobotoExtremo-YTASmn.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
15	RobotoExtremo-YTASmx.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
16	RobotoExtremo-YTEmin.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
17	RobotoExtremo-YTDEmx.ufo		2048	192	94	192	94	0	0		734	359	734	359	666	
18	RobotoExtremo-GRAMn.ufo		2048	131	64	131	64	0	0		816	391	816	391	705	
19	RobotoExtremo-GRAMx.ufo		2048	254	124	254	124	0	0		641	313	641	313	646	
20	RobotoExtremo-wghtmin.ufo		2048	90	44	90	44	0	0		779	381	779	381	618	
21	RobotoExtremo-wghtmx.ufo		2048	421	206	421	206	0	0		439	215	439	215	662	
22	RobotoExtremo-opszmin.ufo		2048	100	205	100	205	0	0		779	381	779	381	728	
23	RobotoExtremo-opszmx.ufo		2048	110	54	110	54	0	0		690	337	690	337	675	
24	RobotoExtremo-wdthmin.ufo		2048	184	90	184	90	0	0		594	290	594	290	547	
25	RobotoExtremo-wdthmx.ufo		2048	202	99	202	99	0	0		874	427	874	427	828	
26	RobotoExtremo-opszmax-wdthmin.ufo		2048	110	54	110	54	0	0		538	110	538	110	819	
27	RobotoExtremo-opszmax-wdthmx.ufo		2048	98	48	98	48	0	0		104	51	104	51	191	
28	RobotoExtremo-opszmax-wghtmin.ufo		2048	600	293	600	293	0	0		90	44	90	44	662	
29	RobotoExtremo-opszmax-wghtmx.ufo		2048	10	5	10	5	0	0		850	415	850	415	661	
30	RobotoExtremo-opszmax-wghtmin-wdthmin.ufo		2048	10	5	10	5	0	0		1260	616	1260	616	906	
31	RobotoExtremo-opszmax-wghtmin-wdthmx.ufo		2048	6	3	6	3	0	0		138	68	138	68	112	
32	RobotoExtremo-opszmax-wghtmx-wdthmin.ufo		2048	600	293	600	293	0	0		500	245	500	245	906	
33	RobotoExtremo-opszmax-wghtmx-wdthmx.ufo		2048	490	240	490	240	0	0		30	15	30	15	508	
34	RobotoExtremo-opszmin-wdthmin.ufo		2048	215	109	215	109	0	0		889	449	889	449	889	
35	RobotoExtremo-opszmin-wdthmx.ufo		2048	197	96	197	96	0	0		639	312	639	312	609	
36	RobotoExtremo-opszmin-wghtmin.ufo		2048	322	157	322	157	0	0		639	312	639	312	731	
37	RobotoExtremo-opszmin-wghtmx.ufo		2048	103	51	103	51	0	0		824	403	824	403	687	
38	RobotoExtremo-opszmin-wghtmin-wdthmin.ufo		2048	314	154	314	154	0	0		499	244	499	244	631	
39	RobotoExtremo-opszmin-wghtmin-wdthmx.ufo		2048	413	202	413	202	0	0		299	146	299	146	579	
40	RobotoExtremo-opszmin-wghtmx-wdthmin.ufo		2048	72	35	72	35	0	0		635	310	635	310	492	
41	RobotoExtremo-opsz24wghtmin-wdthmin.ufo		2048	56	27	56	27	0	0		629	307	629	307	482	
42	RobotoExtremo-opsz24wghtmin-wdthmx.ufo		2048	98	19	98	19	0	0		997	497	997	497	454	
43	RobotoExtremo-opsz24wghtmx-wdthmin.ufo		2048	317	155	317	155	0	0		315	156	315	156	508	
44	RobotoExtremo-opsz24wghtmx-wdthmx.ufo		2048	360	176	360	176	0	0		317	155	317	155	542	
45	RobotoExtremo-opsz24wght700min.ufo		2048	375	183	375	183	0	0		278	136	278	136	634	
46	RobotoExtremo-opsz24wght700mx.ufo		2048	63	31	63	31	0	0		812	397	812	397	535	
47	RobotoExtremo-opsz24wght700mn.ufo		2048	45	22	45	22	0	0		824	403	824	403	646	
48	RobotoExtremo-opsz24wght700mo.ufo		2048	370	181	370	181	0	0		461	226	461	226	665	
49	RobotoExtremo-opsz24wght700ul.ufo		2048	388	190	388	190	0	0		428	209	428	209	662	
50	RobotoExtremo-opsz24wght700uo.ufo		2048	409	200	409	200	0	0		385	188	385	188	668	
51	RobotoExtremo-opsz24wght900ul.ufo		2048	491	240	491	240	0	0		135	66	135	66	665	
52	RobotoExtremo-opsz24wght900uo.ufo		2048	522	255	522	255	0	0		226	111	226	111	664	

AXES IN Beta VF Roboto
Axes map

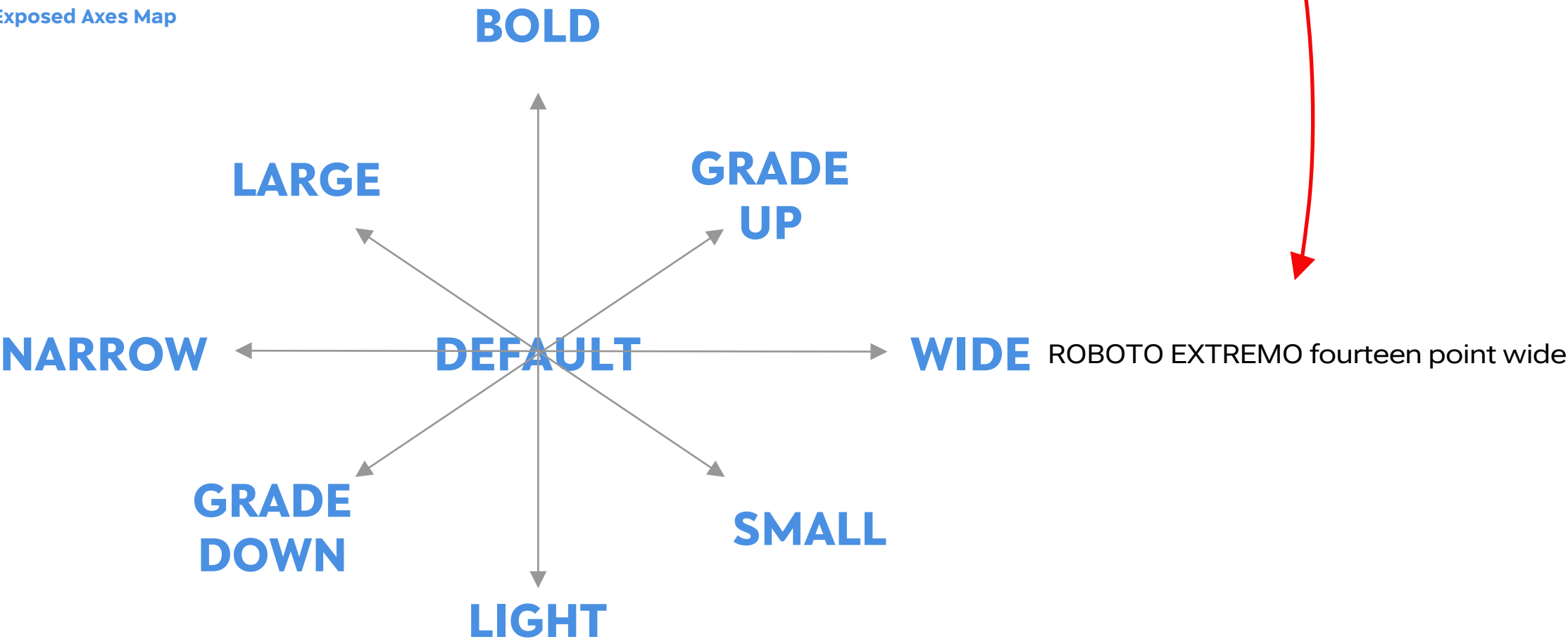
The evolving design space is the other key element in progress, from a single master to parametric axes that are blended, (red values in top diagram), to form the extremes of the registered axes, (like the widest, as shown in the example formed in the bottom diagram).

Parametric will also be used to adjust the registered axes and their combinations as required. After these design uses, if the parametric axes are desired for use, a user or program can adjust them for purposes ranging from justification (XTRA), to linespacing adjustments (YTDE), and multiple parametric axes sued for adjusting Latin to other scripts.

Roboto Extremo Parametric Axes Map



Roboto Extremo Exposed Axes Map



Roboto Extremo Prototype Material

This project plan (repo issue #69, SA-6.1.1), along with other documents associated with deliveries, are on the Extremo repository. At right is shown thumbnails of the Presentation of the Prototype, (repo issue #70 6.1.3), currently in progress.

