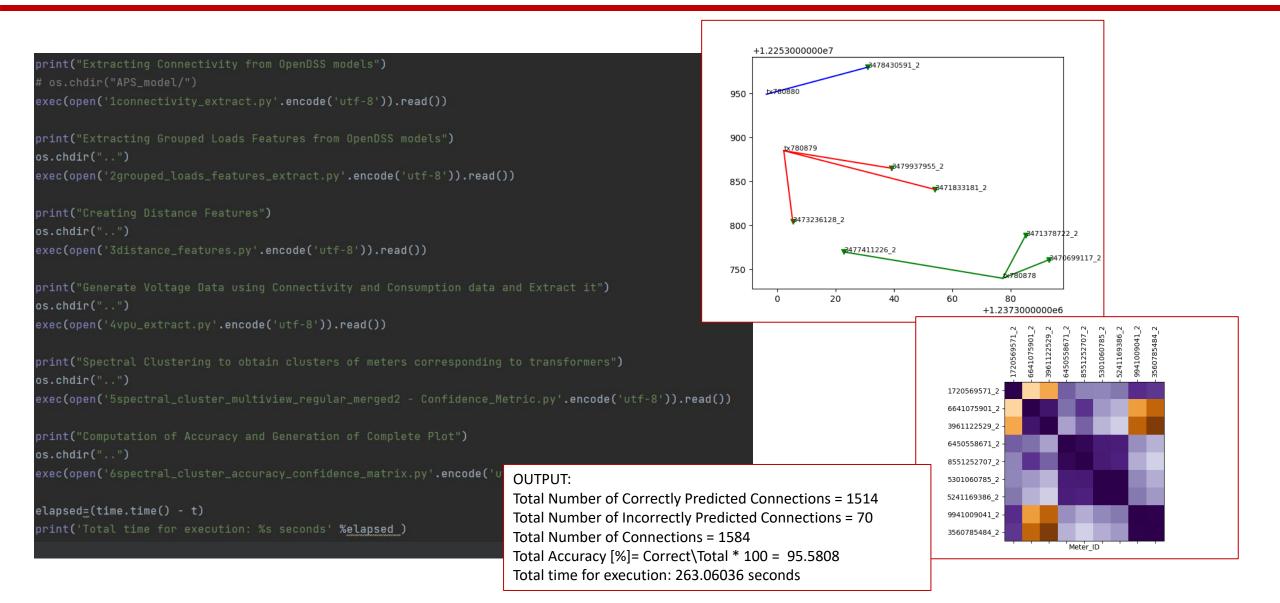
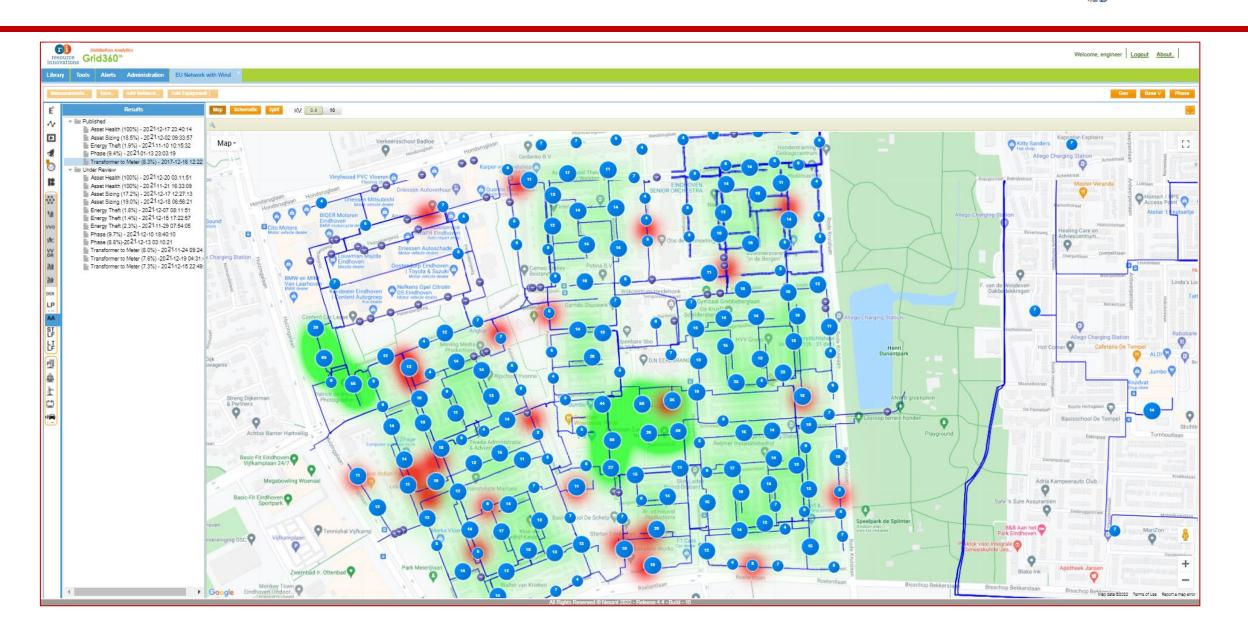
Commercialization - ASU Topology Processor Engine





Commercialization - Topology Processor Visualization

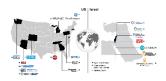


Commercialization - Cyber Metrics API



GET /netwo	rks/device/cybermetrics getallMetricdata			POST /networks	/device/cybermetrics cybermetricsData			
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rdfld * required string (query)	rdfld _ALIAS-523319-G				hidden-"false" aria-disabled-"false" aria-readonly (div id="pittributerial-1785-bodymeng" data-ref- (div class-"x-grid-header-ct x-docked x-grid-heade unselectable" style="border-width: lpx; overflow: 1786" data-extlocabaction="14"; (div id="headercontainer-1786-innerCt" data-ref-" (div id="headercontainer-1786-innerCt") data-ref-"	<pre>_'false" aris <u>multiselectable</u> "true" id-"plAtt "badyking" class"x panel-badyking" role-"press hidden; width: 482px; left: 0px; top: 0px; "rol hidden; width: 482px; left: 0px; top: 0px; "rol innerCt" role-"row" class="x-box-inner" fareefil" "areefil" class"x-box-inner" class-"ner" class".</pre>	<pre>tation'></pre>	
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	Execute		Clear		Cancel			
Responses			Response content type 2/2 v		Parameter content type application/json			
	://dev01-grid360.nexant-dev.com/networks/device/cyberr	metrics?networkId=1001&rdfId=_ALIAS=523319=GAuserId=1" -Н "accept: */*"		networkld * required integer(\$int64) (query) rdfld * required	network/d 1001			
Request URL https://dev01-grid	360.nexant-dev.com/networks/device/cybermetrics?networ	*k1d=1 801&rdf Id=_ALIAS-523319-G&uxerId=1		string (query)	rdfld 07790 RMUT1 TXT1			
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Commercialization - Cyber Metrics Visualization



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E` -^y	Equipment Search Search Equipment	Map Schematic Split KV: 0.4 11 33 0-1 1-2 2-3 3-4 		Profiles Load Forecast Cyber Metrics > Attribute Value
FC AR DER	Search Search C Terror (15) Market (13) Market (13) Ma		Device Name Risk Score 0-10 Vendor Device Family Device Catalog Firmware Ver	NPort 5100 Series 6.122 Moxa NPort 5100 Series NP5110 2.9 [('ip': '192.168.101.60', 'mac': '00:90:e8:70:4e:b7']
		All Rights Reserved © Nexant 2022 - Release 3.0.0 - Build - 1439		

Commercialization - Alert Dashboard



resource innovations Grid360 ^{tos}				Welcome, sargi Logout About
Library Tools Alerts Administration IEEE13_ES100K *				
😑 Delete Alert				
Alert Name	Case	Area	Event Time	Alert Status
No of Violations	IEEE13_ES100K	Fremont	2019-02-04 15:58:20.0	Warning
No of Violations	IEEE13_ES100K	Fremont	2019-02-04 15:58:20.0	Warning
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No of Violations	IEEE13_ES100K	Fremont	2019-02-04 15:58:20.0	Warning
No of Violations	EuropeanNetwork	European	2019-02-04 16:01:57.0	Warning
No of Violations	IEEE13_ES100K	Fremont	2019-03-14 12:52:53.0	Warning

Commercialization - Violation Reports

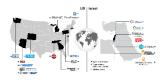
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nts Save Add Network Attachments	Add Equipment •											Overlay Import Ø Gen
Results	All Generators Summary	Dev	vice	From	То		Malaa	Define	11-14	0	Violation (%)	
nbalanced Power Flow DR/DER 🛛 📊 🧱	Branch Current Unbalance Index	Туре	Name	Bus Section Substation	Bus Section Substation	Phase	Value	Rating	Unit	Condition	violation (%)	
	Branch Flow	TopologicalNo	-	Bus3_650		в	2.1899		kV	Under V	4.0248	
Shopping Center + Solar DG +SUMMER+Sc Shopping Center +SUMMER+Scale Load10	Bus Section Data	TopologicalNo		Bus2_692		A	2.1528		kV	Under V	5.6506	
Storage +SUMMER+Scale Load100+15-07	Bus Voltage	TopologicalNo		Bus2_692		В	2.2768		kV	Under V	0.2154	
Base+summer+ScaleLoad100+15-07-2019 1 Solar DG + Storage +SUMMER+Scale Load		TopologicalNo		Bus2_692		c	2.1162		kV	Under V	7.2533	
Solar DG + Storage + SUMMER+Scale Load	Convergence	TopologicalNo		Bus1_633		A	2.1608		kV	Under V	5.3000	
Solar DG +SUMMER+Scale Load100+02-07		TopologicalNo	_	Bus1_633		В	2.2579		kV	Under V	1.0431	
Solar DG +SUMMER+Scale Load100+02-07	EV Summary	TopologicalNo	_	Bus1_633		C A	2.2171 2.1374		kV	Under V	2.8324	
Solar DG +SUMMER+Scale Load100+02-07 Test DR 1 + Solar DG + EVCS +SUMMER+	Error Execution	TopologicalNo TopologicalNo	-	Bus5_675 Bus5 675		A C	2.13/4		kV kV	Under V Under V	7.4724	
Test DR 1 + Solar DG + EVCS +SUMMER+		TopologicalNo	-	Busb_6/b Busb_670		A	2.1112		kV KV	Under V Under V	4.1804	
Restaurant HVAC + Solar DG + Storage + E	Generator	TopologicalNo		Bus9_670		B	2.1863		kV kV	Under V	1.1623	
Storage Farm +SUMMER+Scale Load100+2 Solar DG + Storage + EVCS +SUMMER+Sc	Load	TopologicalNo		Bus9_670		c	2.1903		kV kV	Under V	4.0043	
Storage + EVCS +SUMMER+Scale Load10	Load Aggregate	TopologicalNo		Bus8_634		A	0.2445		kV	Under V	7.1441	
Image 00:00 Storage (0.00 KWH) + EVCS (0 KW)	Load Summary	TopologicalNo		Bus8 634		B	0.2556		kV	Under V	2.9077	
 Im 01:00 Storage(3.50KWH)+EVCS(0KW) Im 02:00 Storage(3.50KWH)+EVCS(0KW) 		TopologicalNo	-	Bus8_634		c	0.2508		kV	Under V	4.7328	
 Image(3.50KWH)+EVCS(0KW) Image(3.50KWH)+EVCS(0KW) 	Loss Summary	TopologicalNo	-	Bus10 680		A	2.1528		κV	Under V	5.6506	
• Im 04:00 Storage(3.50KWH)+EVCS(0KW)	Parameter	TopologicalNo	-	Bus10 680		в	2.2768	2.2817	kV	Under V	0.2154	
 Im 05:00 Storage(2.60KWH)+EVCS(0KW) Im 06:00 Storage(2.00KWH)+EVCS(0KW) 	Regulator	TopologicalNo		Bus10_680		С	2.1162	2.2817	kV	Under V	7.2533	
 Image(2.00KWH)+EVCS(0KW) Image(2.00KWH)+EVCS(0KW) 	-	TopologicalNo		Bus12_646		в	2.2242	2.2817	kV	Under V	2.5189	
> > 09:00 Storage(0.00KWH)+EVCS(0KW)	Sequence Voltage	TopologicalNo	Bus12_646	Bus12_646		С	2.2256	2.2817	kV	Under V	2.4601	
Image: 10:00 Storage(-5.50KWH)+EVCS(0KW)	Shunt	TopologicalNo	Bus14_684	Bus14_684		A	2.1495	2.2817	kV	Under V	5.7940	
III 11:00 Storage(-5.50KWH)+EVCS(29.4KW) III 12:00 Storage(-5.50KWH)+EVCS(29.4KW)	Shunt Summary	TopologicalNo	Bus14_684	Bus14_684		С	2.1125	2.2817	kV	Under V	7.4168	
Image: 13:00 Storage(-3.50KWH)+EVCS(29.4KW)	Storage	TopologicalNo	Bus15_671	Bus15_671		А	2.1528	2.2817	kV	Under V	5.6506	
+ 14:00 Storage(-0.60KWH)+EVCS(0KW)	Storage Summary	TopologicalNo	Bus15_671	Bus15_671		в	2.2768	2.2817	kV	Under V	0.2154	
Storage + EVCS +SUMMER+Scale Load10 Base+summer+ScaleLoad14+31-01-2019 00		TopologicalNo	Bus15_671	Bus15_671		С	2.1162	2.2817	kV	Under V	7.2533	
Base+summer+ScaleLoad1+31-01-2019 00:	Summary for Visualization	TopologicalNo	Bus7_652	Bus7_652		A	2.1396	2.2817	kV	Under V	6.2253	
Base+summer+ScaleLoad100+30-01-2019 2	System Input	TopologicalNo	Bus4_611	Bus4_611		С	2.1088		kV	Under V	7.5758	
Shopping Center + Solar DG + Storage +SU	System Summary	TopologicalNo	Bus13_RG	Bus13_RG		в	2.1899	2.2817	kV	Under V	4.0248	
		TopologicalNo	-	Bus11_645		в	2.2274		kV	Under V	2.3785	
	Transformer	TopologicalNo	-	Bus11_645		С	2.2293		kV	Under V	2.2969	
	Violation	TopologicalNo	Bus16_632	Bus16_632		A	2.2027		kV	Under V	3.4638	
	Voltage Unbalance Index	TopologicalNo		Bus16_632		в	2.2471		kV	Under V	1.5141	
		TopologicalNo	Bus16_632	Bus16_632		С	2.2320		kV	Under V	2.1789	
		Transformer	Reg1	Bus3_650	Bus13_RG	A			V	Under Controlle	100.0000	
		Transformer	Reg1	Bus3_650	Bus13_RG	в		121.00		Under Controlle	100.0000	
		Transformer	Reg1	Bus3 650	Bus13_RG	С	0.0000	121.00	V	Under Controlle	100.0000	



Form Industry Advisory Board

Board member organizations from previous collaboration of Nexant with ASU: ComED, Entergy, Oncor, PSEG, Salt River Project, San Diego Gas & Electric Company, Southern California Edison, Southern Company, UK Power Networks

Future Industry Advisory Board will include Arava Power, Duquesne Light Company, and Arizona Public Service plus many other utility companies



Add developed software as "engines" inside of Grid360

Create commercial grade engines to be embedded in Energy Management Systems (EMS), Distribution Management Systems (DMS), and Supervisory Control and Data Acquisition (SCADA) systems, similar to Nexant's current work with ABB, GE, Toshiba, and Smarter Grid Solutions