OPEN CODING: code comparison between iterations

CODES ITERATION 1	CODES ITERATION 2
B01 better user experience	B01 better user experience
B02 less response time	B02 less response time
B03 greater efficiency and speed	B03 greater efficiency
B04 save energy	B04 save energy
	B05 better performance
	B06 business needs
C01 (physical/virtual) device characterization: intelligence, reliability, security, efficiency, availability, status, load	C01 (physical/virtual) device characterization: intelligence, status, load
C02 restricted capabilities (limited computational capabilities)	C02 device capability (limited/restricted computational capabilities)
C03 devices type: sensors, actuators, constrained devices, gateways, micro-controllers, miniPCs, servers	C03 sensors, actuators, constrained devices, gateways, micro-controllers, miniPCs
C04 devices type: medical devices	C04 medical devices
	C05 servers, mini-datacenters
	C06 IoT SIM cards
	C07 distributed architecture
F01 local processing in device	F01 local processing (computation) in device
~~F02 reliable services~~	-
F03 devices take over part of the data center/cloud workload	F03 devices take over part of the data center/cloud workload
F04 functionality: data collection	F04 data collection and processing
F04 functionality: data aggregation and filtering, data analytics, video processing, artificial intelligence, control logic	F05 data aggregation and filtering and data analytics
	F06 video processing, virtual (augmented) reality, artificial intelligence, and control logic
F04 functionality: communication with other devices	F07 communication with other devices
F04 functionality: decision making	F08 decision making
~~F05 bringing infrastructure closer to the consumer~~	-
G01 cloud-managed (remote) over the air updates	G01 cloud-managed (remote) over the air updates
G02 continuous integration (CI) and continuous delivery/deployment (CD)	G02 continuous integration (CI) and continuous delivery/deployment (CD)
G03 remote and local over-the-air updates	G03 remote and local over-the-air updates
G04 automated provisioning, monitoring, deployment, build, testing, maintaning	G04 automated provisioning, monitoring, deployment, build, testing, maintaining
G05 bringing agile methodologies with customers	G05 bringing agile methodologies with customers
G06 servers (remote) over the air updates	G06 servers (remote) over the air updates
G07 https requests (remote) over the air updates	G07 https requests (remote) over the air updates
	G08 billing data in real time
	G09 locally-managed over the air updates
N01 (less) bandwith	N01 (less) bandwidth
N02 (less/low) latency	N02 (less/low) latency
N03 speed up communications	N03 speed up communications
N04 data exchange between multiple nodes	N04 data exchange between multiple nodes
	N05 disconnected mode
R01 time to market	R01 time to market
R02 speed up delivery	R02 speed up delivery
R03 supervision and management, certifications	R03 supervision and management, certifications
R04 deployment time	R04 deployment time
R05 scalability	R05 scalability
R06 security	R06 security
R07 vendor lock-in	R07 vendor lock-in
R08 (maintenance) cost	R08 (maintenance) cost
R10 reliability	R10 reliability
T01 containers	T01 containers
T02 virtual environments (machines, networks, servers)	T02 virtual environments (machines, networks, servers)
T03 downlinks of wireless communication networks	T03 downlinks of wireless communication networks
T04 orchestration layer	T04 orchestration layer

Groundedness of codes (number of quotations coded by a code)

Code	Groundedness
C03 sensors, actuators, constrained devices, gateways, micro-controllers, miniPCs	14
F01 local processing (computation) in device	14
F05 data aggregation and filtering and data analytics	11
N02 (less/low) latency	11
R06 security	10
T01 containers	10
G04 automated provisioning, monitoring, deployment, build, testing, maintaining	9
C01 (physical/virtual) device characterization: intelligence, status, load	6
C02 device capability (limited/restricted computational capabilities)	6
F06 video processing, virtual (augmented) reality, artificial intelligence, and control logic	6
R08 (maintenance) cost	6
F03 devices take over part of the data center/cloud workload	5
G01 cloud-managed (remote) over the air updates	5
N01 (less) bandwidth	5
R05 scalability	5
B02 less response time	4
B03 greater efficiency	4
B06 business needs	4
F04 data collection and processing	4
G06 servers (remote) over the air updates	4
R01 time to market	4
T02 virtual environments (machines, networks, servers)	4
B04 save energy	3
B05 better performance	3
C07 distributed architecture	3
R03 supervision and management, certifications	3
R07 vendor lock-in	3
B01 better user experience	2
C04 medical devices	2
F08 decision making	2
G02 continuous integration (CI) and continuous delivery/deployment (CD)	2
G03 remote and local over-the-air updates	2
G09 locally-managed over the air updates	2
R02 speed up delivery	2
R10 reliability	2
T04 orchestration layer	2
C05 servers, mini-datacenters	1
C06 IoT SIM cards	1
F07 communication with other devices	1
G05 bringing agile methodologies with customers	1
G07 https requests (remote) over the air updates	1
G08 billing data in real time	1
N03 speed up communications	1
N04 data exchange between multiple nodes	1
N05 disconnected mode	1
R04 deployment time	1
T03 downlinks of wireless communication networks	1

Groundedness of semantic domains (number of quotations coded by a semantic domain)

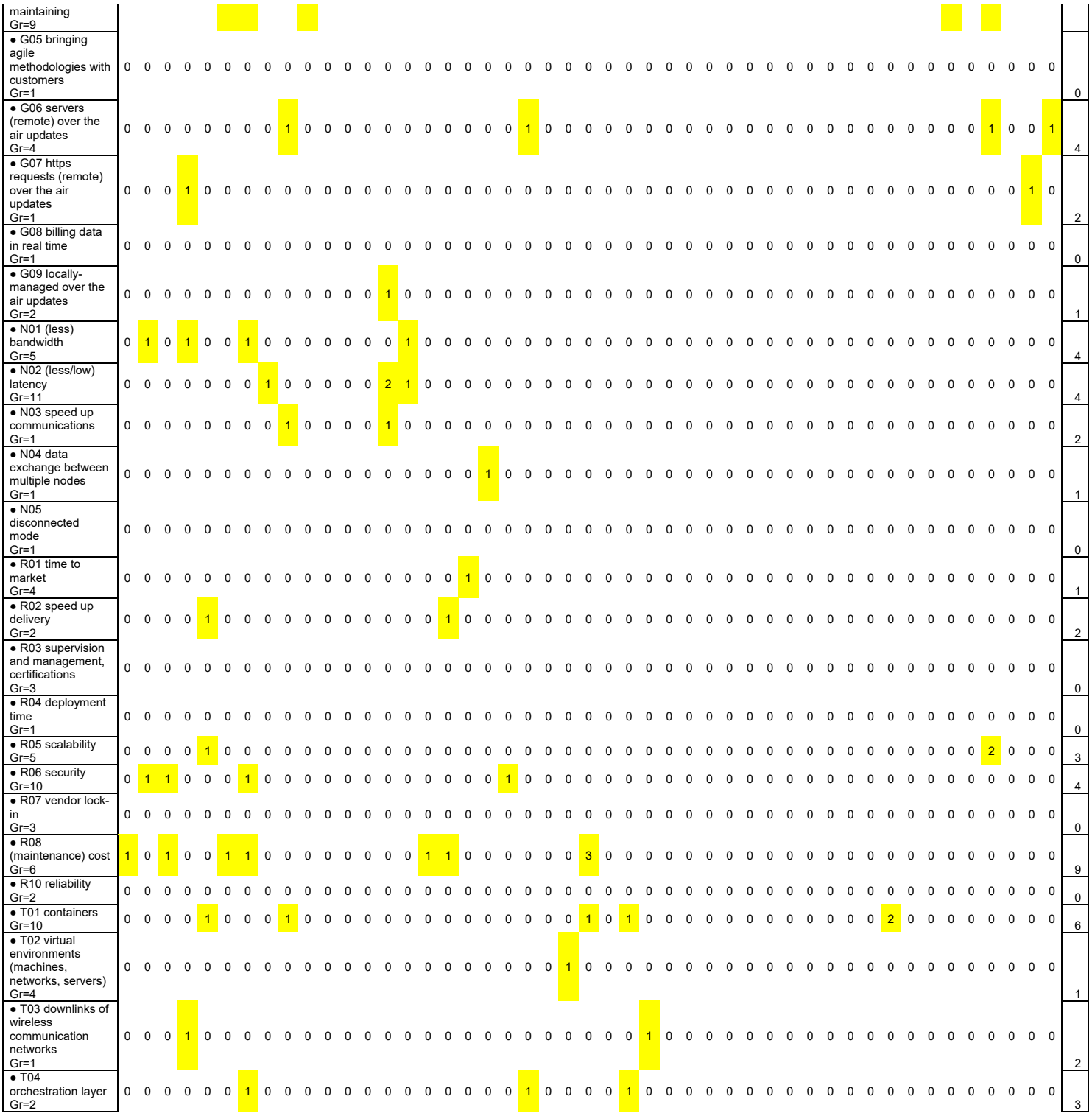
Dominio	Groundedness
Benefits	20
Conceptualization	33
Functionality	43
Management	27
Network	19
Challenges	36
Technology	17

Dominio	Groundedness
Functionality	43
Challenges	36
Conceptualization	33
Management	27
Benefits	20
Network	19
Technology	17

Density of codes (number of relationships between codes – co-occurrence in the same quotation)

1- Co-occurrence table per code

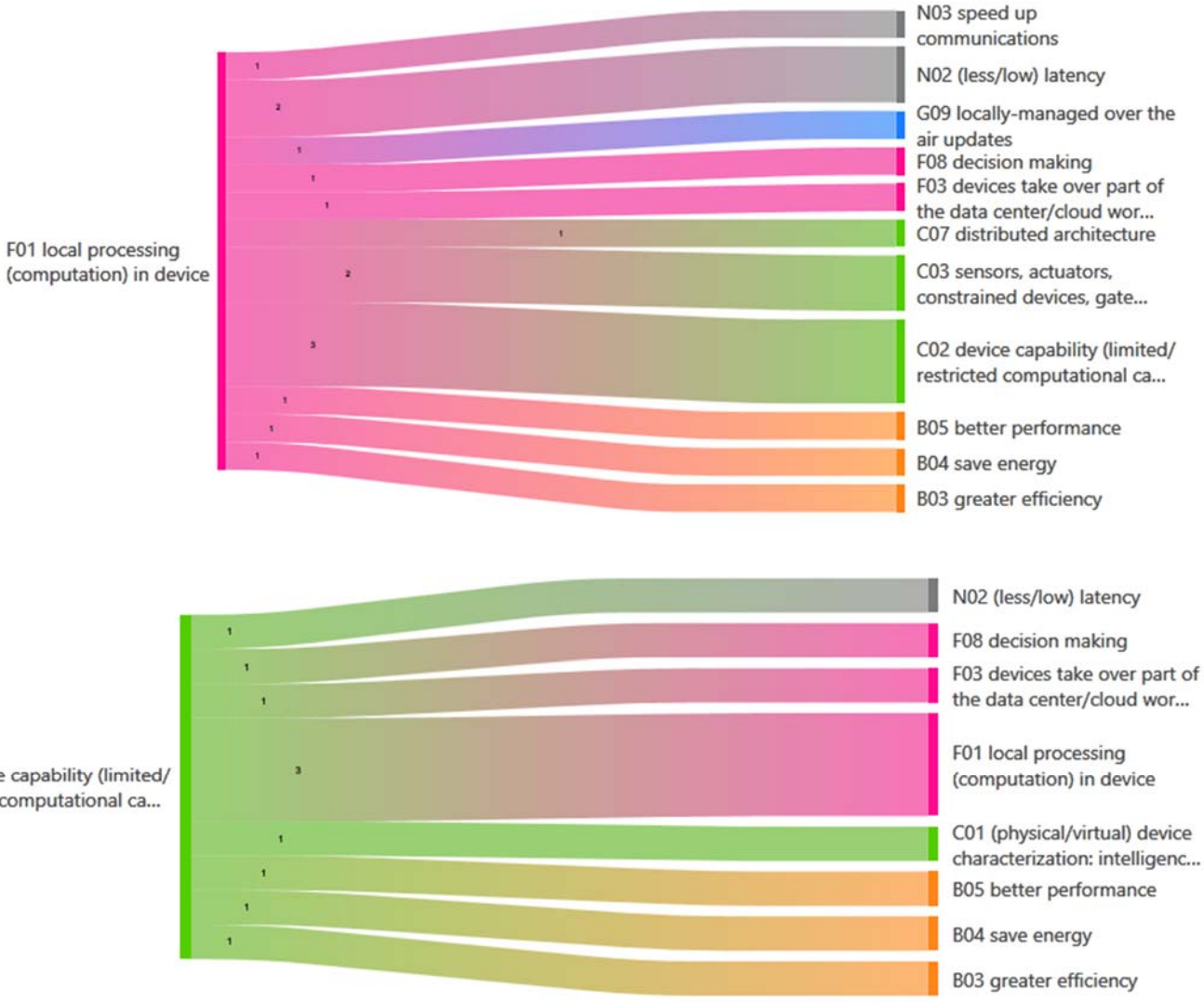
• B01 better user experience Gr=2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
• B02 less response time Gr=4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
• B03 greater efficiency Gr=4	0	1	0	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	8
• B04 save energy Gr=3	0	0	1	0	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	9
• B05 better performance Gr=3	0	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	8
• B06 business needs Gr=4	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5
• C01 (physical/virtual) device characterization: intelligence, status, load Gr=6	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	9
• C02 device capability (limited/restricted computational capabilities) Gr=6	0	0	1	1	1	0	1	0	0	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
• C03 sensors, actuators, constrained devices, gateways, micro-controllers, miniPCs Gr=14	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7
• C04 medical devices Gr=2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
• C05 servers, mini-datacenters Gr=1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
• C06 IoT SIM cards Gr=1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
• C07 distributed architecture Gr=3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
• F01 local processing (computation) in device Gr=14	0	0	1	1	1	0	0	3	2	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
• F03 devices take over part of the data center/cloud workload Gr=5	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
• F04 data collection and processing Gr=4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
• F05 data aggregation and filtering and data analytics Gr=11	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	7
• F06 video processing, virtual (augmented) reality, artificial intelligence, and control logic Gr=6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
• F07 communication with other devices Gr=1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
• F08 decision making Gr=2	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5
• G01 cloud-managed (remote) over the air updates Gr=5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
• G02 continuous integration (CI) and continuous delivery/deployment (CD) Gr=2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
• G03 remote and local over-the-air updates Gr=2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
• G04 automated provisioning, monitoring, deployment, build, testing,	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	7



2- Density of codes

● F01 local processing (computation) in device Gr=14	15
● C02 device capability (limited/restricted computational capabilities) Gr=6	10
● B04 save energy Gr=3	9
● C01 (physical/virtual) device characterization: intelligence, status, load Gr=6	9
● R08 (maintenance) cost Gr=6	9
● B03 greater efficiency Gr=4	8
● B05 better performance Gr=3	8
● C03 sensors, actuators, constrained devices, gateways, micro-controllers, miniPCs Gr=14	7
● F03 devices take over part of the data center/cloud workload Gr=5	7
● F05 data aggregation and filtering and data analytics Gr=11	7
● G04 automated provisioning, monitoring, deployment, build, testing, maintaining Gr=9	7
● T01 containers Gr=10	6
● B06 business needs Gr=4	5
● F08 decision making Gr=2	5
● B02 less response time Gr=4	4
● G06 servers (remote) over the air updates Gr=4	4
● N01 (less) bandwidth Gr=5	4
● N02 (less/low) latency Gr=11	4
● R06 security Gr=10	4
● B01 better user experience Gr=2	3
● F04 data collection and processing Gr=4	3
● R05 scalability Gr=5	3
● T04 orchestration layer Gr=2	3
● C04 medical devices Gr=2	2
● G01 cloud-managed (remote) over the air updates Gr=5	2
● G07 https requests (remote) over the air updates Gr=1	2
● N03 speed up communications Gr=1	2
● R02 speed up delivery Gr=2	2
● T03 downlinks of wireless communication networks Gr=1	2
● C07 distributed architecture Gr=3	1
● F06 video processing, virtual (augmented) reality, artificial intelligence, and control logic Gr=6	1
● F07 communication with other devices Gr=1	1
● G03 remote and local over-the-air updates Gr=2	1
● G09 locally-managed over the air updates Gr=2	1
● N04 data exchange between multiple nodes Gr=1	1
● R01 time to market Gr=4	1
● T02 virtual environments (machines, networks, servers) Gr=4	1
● C05 servers, mini-datacenters Gr=1	0
● C06 IoT SIM cards Gr=1	0
● G02 continuous integration (CI) and continuous delivery/deployment (CD) Gr=2	0
● G05 bringing agile methodologies with customers Gr=1	0
● G08 billing data in real time Gr=1	0
● N05 disconnected mode Gr=1	0
● R03 supervision and management, certifications Gr=3	0
● R04 deployment time Gr=1	0
● R07 vendor lock-in Gr=3	0
● R10 reliability Gr=2	0

3- Charts for codes with greater density



Density of semantic domains (number of relationships between semantic domains – co-occurrence in the same quotation)

1- Co-occurrence table per semantic domain

	Benefits	Conceptualization	Functionality	Management	Network	Challenges	Technology
Benefits	~	6	10	2	2	7	2
Conceptualization		~	9	3	3	2	2
Functionality			~	1	6	5	0
Management				~	0	3	6
Network					~	0	0
Challenges						~	2
Technology							~

2- Density of semantic domains

	Densidad
Benefits	29
Functionality	21
Conceptualization	19
Management	13
Challenges	12
Technology	10
Network	9

3- Charts for semantic domains with greater density

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Analysis of core categories

Based on the analysis of groundedness and density, the core categories are:

- Functionality
- Conceptualization
- Challenges
- Benefits

See the document selection of core categories – codebook.pdf