

A close-up photograph of golden wheat stalks, slightly out of focus, creating a warm, textured background. The lighting is soft and golden, suggesting a sunrise or sunset.

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# **Anuket RA2 - Kubernetes Reference Architecture**

**Update & Next steps**



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- Anuket RA2 Lakelse release – what's new?
- Survey - items for Moselle:
  - infrastructure monitoring/telemetry
  - security
  - application LCM
- Open discussion: multi tenancy et al.

# RA2 releases & scope

v.	Date	Name
1.0-alpha	10 <sup>th</sup> Jan 2020	Snezka
3.0	15 <sup>th</sup> May 2020	Baldy
4.0	25 <sup>th</sup> Sep 2020	Baraque
5.0	29 <sup>th</sup> Jan 2021	Elbrus
6.0	30 <sup>th</sup> Jun 2021	Kali
7.0	7 <sup>th</sup> Dec 2021	Lakelse
8.0	14 <sup>th</sup> June 2022	Moselle

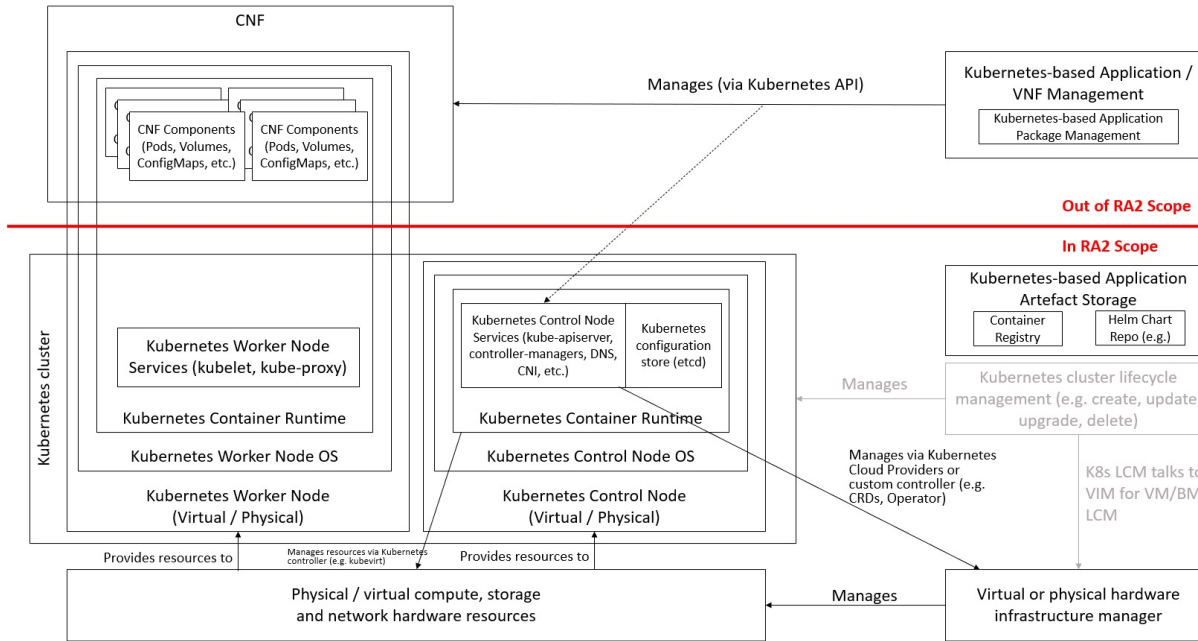
## Anuket – Lakelse: Released

- M1 Release definition – 29<sup>th</sup> June 21
- M2 Scope Freeze – 31<sup>st</sup> August 21
- M3 Content Freeze – 19<sup>th</sup> October 21
- M4 Proofreading – 16<sup>th</sup> November 21
- M5 Rel. Readiness – 30<sup>th</sup> November 21
- M6 Release – 4<sup>th</sup> January 22

# RA2 Bogometer

Chapter	Status	Notes
Chapter 01 - Overview	Complete	
Chapter 02 - Architecture Requirements	Lots of SME feedback	<b>Requirements</b> – from RM
Chapter 03 - L2: High Level Architecture	Lots of SME feedback	CaaS <b>building blocks</b>
Chapter 04 - L3: Component Level Architecture	Lots of SME feedback	<b>Specs</b> for clusters: Nodes, sizing, K8s control plane, Networking & plugins, storage, workload reqs.
Chapter 05 - Security Guidance	Lots of SME feedback	<b>Security policies</b> for CaaS
Chapter 06 - Special Interest Group level requirements	Still developing content	Maps specs to K8s SIG features <b>tested by Functest</b>
Chapter 07 - Gaps, Innovation, and Development	Lots of SME feedback	What's <b>missing</b> from the ecosystem
Appendix A - Guidance For workload isolation (multitenancy) with Kubernetes	Still developing content	<b>Multitenancy</b> guidance

# RA2 scope & Lakelse review



- **Upgrade to Kubernetes 1.22**
- **Add K8s service type specs (Load Balancer, etc)**
- **CNI multiplexers**
- **Alignment with Anuket RM – security specs**
- **Explicitly list Kubernetes APIs and Feature support**
- **Multitenancy, workload isolation and Namespaces**

# RA2 Lakelse review - detail

Topic	Comments
<b>Alignment with RM - security</b>	Priority: <b>To be included in this Release</b> Status: PRs <a href="#">2673</a> , <a href="#">2662</a> , <a href="#">2525</a> merged
<b>Multitenancy, workload isolation and Namespaces</b>	Priority: <b>To be included in this Release</b> Status: PR <a href="#">2672</a> merged
<b>Explicitly list Kubernetes APIs and Feature support</b>	Priority: <b>To be included in this Release</b> incl. supported features APIs and objects & Sync SIG Features tables with ch4 specs & add policy (ga and beta, no alpha) Status: PR <a href="#">2651</a> merged
<b>Upgrade to Kubernetes 1.22</b>	Priority: <b>To be included in this Release</b> Status: PR <a href="#">2587</a> Merged
<b>Add K8s service type specs</b>	Priority: <b>To be included in this Release</b> For primary interfaces, ServiceTypes/NodePorts/LoadBalancers Status: PR <a href="#">2628</a> merged
<b>Implementation-agnostic CNI multiplexers (incl. API)</b>	Priority: <b>To be included in this Release</b> if an implementation-agnostic solution to have generic pod manifests that work with all possible multiplexers can be found, RA2 should mandate it, otherwise state alternative way out (ie operators to pick an implementation) Status: PR <a href="#">2573</a> merged

- Infrastructure monitoring & telemetry
- More on Security
- Application LCM
- Any backlog:

Backlog	Comments
Enhance CaaS-on-VM specs	<b>hypervisor-layer specs to support caas clusters made with VM-based nodes</b>
CNF packaging	Deployment level - helm etc. NFVO level - TOSCA / SOL1/SOL4 v4 / ONAP CSAR + ASD ?
Alignment with RM - edge cloud	
Alignment with RM - SFC	



# Open discussion

- Approaches to multi tenancy
- Soft multitenancy – Namespaces
- Hard multitenancy – dedicated clusters
- Challenges? Best practices?

# Join us!

**We aim to accelerate the adoption of telco cloud using open standards and architectures.**

**We welcome contributors from any background. Feel free to join our meetings, mail us or check the repository.**

**Weekly meetings – Thursday @ 1500 UTC:**

**<https://wiki.anuket.io/display/HOME/Anuket+Meetings>**

**Mailing list: <https://lists.anuket.io/q/ra2>**

**Wiki: <https://wiki.anuket.io/x/QqB>**

**Docs: [https://cntt.readthedocs.io/en/latest/ref\\_arch/kubernetes/](https://cntt.readthedocs.io/en/latest/ref_arch/kubernetes/)**

**GitHub project: <https://github.com/cntt-n/CNTT/projects/10>**