

# Incident Report

## DATACENTER CONNECTIVITY LOSS

Customer – External



<b>Datacenter connectivity loss</b>	
Applicable customers	All customers in datacenter AZ1, AZ2, AZ3, ODN (AZ = Availability Zone)
Start date and time of incident	01.11.2021 16:50:09
End date and time of incident	02.11.2021 05:02:11
Related incident or problem nr.	Multiple Incident numbers.
Disruption description/impact	<p>Customers and datacenter AZ2 and ODN had loss of connectivity.</p> <p>Customers in AZ3 had for the most customers full connectivity.</p> <p>Customers that use DNS located at ODN DC had problems with resolving names.</p>
Root Cause	<p>Major fibre cut (line of sight) at Sentia’s supplier Global Connect between Kolding and Odense.</p> <p>Sentia has from Kolding datacenter (AZ3) towards Ballerup datacenter (AZ2) and Taastrup datacenter (AZ1) redundant connectivity, which means AZ3 is connected with 2 x 100G towards AZ2 and 2 x 100G towards AZ1. Each direction (AZ3 to AZ2 and AZ3 to AZ1) is independent of each other and full operational service can be performed if just 1 out of 4 links is operational. AZ 1 + AZ2 + AZ3 forms a redundant network ring structure.</p> <p>Sentia’s supplier should have delivered all 4 paths with full diversity as ordered from Sentia. This incident proves that is not the case. Sentia will investigate this.</p> <p>See in addition the section “Preventive measures” below.</p>
Total accumulated production downtime	<p>Full down time: 9,55 hours</p> <p>For most customers the actual down time was: 2,25 hours</p>
Actions to fix	<p>Global connect repaired fibre cut.</p> <p>Sentia established Workarounds where possible</p>

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Preventive measures	<ul style="list-style-type: none"> <li>• Sentia will, in dialogue the supplier, ensure that full diversity in fibre paths, as Sentia has bought, will be implemented and more redundancy where it is feasible will be added.</li> <li>• Including the secondary lines must have at alternate paths.</li> <li>• Review inter-AZ connectivity and ensure physical redundant paths.</li> <li>• Improve the internal redundancy with extra DNSs servers in each AZ</li> <li>• and analyse other ways of improving redundancy when losing data connections.</li> </ul> <p>There are further follow-up meetings with the supplier this week and a full report describing the preventive measures will be made available to customers.</p>
Affected CI's	dkaz1-cp001-bdr-01, dkaz2-cp001-bdr-01, dkaz3-cp001-bdr-01
Communication	During the Incident at least each hour status was communicated to customers at <a href="https://sentia.com/dk/driftsstatus/">https://sentia.com/dk/driftsstatus/</a>

**Timeline of events**

Time	Description
2021-11-01 16:50 CET	All four links from AZ3 to AZ2 and AZ1 go down. Two links between AZ3 and ODN go down.
2021-11-01 16:52 CET	On call duty starts investigating problem.
2021-11-01 16:54 CET	Colleagues are brought in for troubleshooting.
2021-11-01 16:56 CET	Call to ISP Global Connect to report the problem. Mail to GC NOC, case id CS0610083
2021-11-01 17:05 CET	Troubleshoot and investigating several scenarios to bring connectivity back.
2021-11-01 17:42 CET	Decision made to isolate AZ3 datacenter to reduce impact for customers.
2021-11-01 19:15 CET	This workaround fully implemented.
2021-11-01 23:54 CET	Decision to move virtual DNS from Odense to Kolding initiated and action taken.
2021-11-02 02:29 CET	One link to ODN comes up and one crosslinks from AZ3 to AZ1 and AZ2 comes back up
2021-11-02 04:12 CET	Redundant link to ODN comes up as well as the two last redundancy links from AZ3 to AZ1 and AZ2
2021-11-02 05:02 CET	Rollback of workaround implementation done and verified
2021-11-02 05:15 CET	<a href="https://sentia.com/dk/driftsstatus/">https://sentia.com/dk/driftsstatus/</a> is updated with the information that all services are back to normal.