MLaaS (Machine Learning as a Service) with MATLAB Production Server

Faizan Aslam
Faizan.Aslam@infineon.com

Power Management and Multimarket
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A world leader in semiconductor solutions

Our vision
We are the link between the real and the digital world.

Our values
We commit
We partner
We innovate
We perform

Our mission
We make life easier, safer and greener.

Part of your life. Part of tomorrow.
Infineon at a glance

**Business Segments**
- Digital Security Solutions (DSS)
- Power Management & Multi-market (PMM)
- Industrial Power Control (IPC)

**Employees**
- 40,100 employees worldwide (as of Sept. 2018)
  - Europe 17,400
  - Americas 3,900
  - Asia/Pacific 18,800
- 35 R&D locations
- 17 manufacturing locations

**Financials**

<table>
<thead>
<tr>
<th>[EUR m]</th>
<th>FY 14</th>
<th>FY 15</th>
<th>FY 16</th>
<th>FY 17</th>
<th>FY 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>4,320</td>
<td>5,795</td>
<td>6,473</td>
<td>7,063</td>
<td>7,599</td>
</tr>
<tr>
<td>Segment Result</td>
<td>14.4%</td>
<td>15.5%</td>
<td>15.2%</td>
<td>17.1%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Segment Result margin</td>
<td>620</td>
<td>897</td>
<td>982</td>
<td>1,208</td>
<td>1,353</td>
</tr>
</tbody>
</table>

Further information in the [Annual Report 2018](#)

**Market Position**
- Automotive #2
  - Strategy Analytics, April 2018
- Power #1
  - IHS Markit, Technology Group, September 2018
- Security ICs #1
  - ABI Research, October 2018

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RF and Sensing devices enable new services and will shape the way we live and work.

Various use cases are enabled by a small set of versatile core technologies:

- Augmented Reality
- Voice-controlled devices
- Smart streetlights
- Commercial and consumer multicopters
- Gesture control
- Industrial robotics
From Sensors to Smart Services

Infineon’s intuitive sensing solutions

We believe that the most essential value of an alarm system is its reliability.

Existing glass break alarm systems:
- Microphone
- Audio data processing
- Glass break detection

Infineon’s glass break alarm system:
- Microphone
- Pressure sensor
- Audio data processing
- Pressure data processing
- Glass break detection
- Pressure pattern detection
- Time synchronized
- Intrusion event detection

Infineon’s glass break alarm system testing solution can cover following applications:

Machine Learning as a Service (MLaaS) for connected devices

- Inference running in the cloud
- Requires to be online
- Depends on the sensor/applications latency & Bandwidth requirements
Machine Learning as a Service (MLaaS) for edge devices

- Inference running on the edge device
- Works offline with low latency
- Requires design level considerations to enable the use case
MATLAB Production Server (MPS) Evaluation

- Deployment of a scalable and secure infrastructure is a huge challenge

- Evaluation of MPS for a demo project
  - Deployed on AWS
  - Classification as a service
  - Web application as client

- The process

Source: [https://www.mathworks.com/cloud/](https://www.mathworks.com/cloud/)
How MATLAB Production Server (MPS) helped?

› Reduced time-to-market
  ➢ From prototype MATLAB code to web service

› Scalable infrastructure
  ➢ On demand scaling
  ➢ Public cloud hosting
  ➢ Security

› Integration
  ➢ API access
Summary / Conclusion

MPS Evaluation
› MPS is a well-placed product that reduces our time-to-market

MLaaS validation
› Validated that MLaaS is also relevant for us and our end customers

Next Steps
› Evaluation of MPS for MLaaS in a complex real-life system
Part of your life. Part of tomorrow.