

# EDISON

Electromagnetic Design of  
flexIble SensOrs



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## Raport 80 - Servers Comparison

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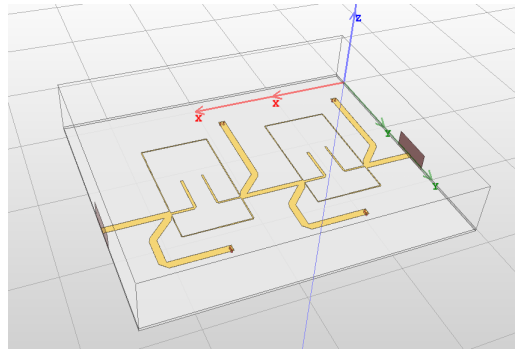
The „EDISON - Electromagnetic Design of flexIble SensOrs” project, agreement no TEAM TECH/2016-1/6, is carried out within the TEAM-TECH programme of the Foundation for Polish Science co-financed by the European Union under the European Regional Development Fund.

# 1 Machines

The tests have been performed on the following machines:

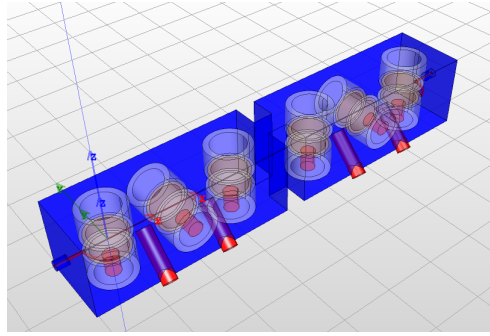
- **Yaguar**  
2x Xeon Gold 6136; częstotliwość podstawowa 3 GHz; turbo 3,7 GHz; 2x 12 rdzeni
- **Oxford**  
2x Xeon E5-2680 v3; 2,5 GHz; 3,3 GHz; 2x 12 rdzeni
- **PC Martyny**  
Core i7-7820X; 3,6 GHz; 4,5 GHz; 8 rdzeni
- **PC Adama**  
Core i7-9700K; 3,6 GHz; 4,9 GHz; 8 rdzeni

# 2 Filter Roberto



|                           | <b>Martyna</b>       | <b>Yaguar</b>         | <b>Oxford</b>         | <b>Adam</b>          |
|---------------------------|----------------------|-----------------------|-----------------------|----------------------|
| <b>Approx. speed - up</b> | 26.7                 | 14.6                  | 16.2                  | 38.7                 |
| <b>Reduction time</b>     | 248                  | 269                   | 315                   | 218                  |
| Tolerance                 | 0.0001               | 0.0001                | 0.0001                | 0.0001               |
| Moments/freq.point        | 32                   | 32                    | 32                    | 32                   |
| Initial (POD of RHS)      | 11.7                 | 18.15                 | 16.28                 | 9.956                |
| SF/NF/Solv                | 16.12 / 13.9 / 1.964 | 18.17 / 5.998 / 2.499 | 21.59 / 8.255 / 2.604 | 11.4 / 19.58 / 1.063 |
| Solution                  | 174                  | 184                   | 207                   | 139.5                |
| Orthogonalization         | 37.85                | 42.77                 | 60.01                 | 44.98                |
| Local estimator           | 0.336                | 0.452                 | 0.438                 | 0.298                |
| Global estimator          | 0.453                | 0.641                 | 0.562                 | 0.453                |
| Update matrix             | 12.23                | 12.37                 | 16.59                 | 10.47                |
| Final frequency sweep     | 7.939                | 6.373                 | 8.35                  | 9.271                |
| Number of vectors in Q    | 86                   | 86                    | 86                    | 86                   |
| Number of expansion FP    | 3                    | 3                     | 3                     | 3                    |
| Number of variables       | 1373138              | 1373138               | 1373138               | 1373138              |
| Number of FP              | 401                  | 401                   | 401                   | 401                  |
| Lossy?                    | 0                    | 0                     | 0                     | 0                    |
| ABC?                      | 1                    | 1                     | 1                     | 1                    |

### 3 Filter Simone



|                           | <b>Martyna</b>      | <b>Yaguar</b>        | <b>Oxford</b>       | <b>Adam</b>         |
|---------------------------|---------------------|----------------------|---------------------|---------------------|
| <b>Approx. speed - up</b> | 90.221              | 40.088               | 56.827              | 145.369             |
| <b>Reduction time</b>     | 644.759             | 684.330              | 628.281             | 582.288             |
| Tolerance                 | 0.0001              | 0.0001               | 0.0001              | 0.0001              |
| Moments/freq.point        | 32                  | 32                   | 32                  | 32                  |
| Initial (POD of RHS)      | 0.194               | 0.453                | 0.36                | 0.125               |
| SF/NF/Solv                | 40.69 / 107.4 / 6.9 | 47.2 / 43.35 / 11.19 | 55.97 / 65.37 / 7.7 | 28.95 / 163.1 / 3.4 |
| Solution                  | 554                 | 578.3                | 472.7               | 485.7               |
| Orthogonalization         | 57.66               | 70.81                | 108.7               | 68.27               |
| Local estimator           | 0.253               | 0.595                | 0.375               | 0.217               |
| Global estimator          | 0.27                | 0.422                | 0.376               | 0.251               |
| Update matrix             | 24.25               | 23.72                | 32.4                | 21.36               |
| Final frequency sweep     | 0.178               | 0.219                | 0.265               | 0.203               |
| Number of vectors in Q    | 74                  | 74                   | 74                  | 74                  |
| Number of expansion FP    | 2                   | 2                    | 2                   | 2                   |
| Number of variables       | 3453270             | 3453270              | 3453270             | 3453270             |
| Number of FP              | 501                 | 501                  | 501                 | 501                 |
| Lossy?                    | 0                   | 0                    | 0                   | 0                   |
| ABC?                      | 0                   | 0                    | 0                   | 0                   |