

Fleximar, A Novel Marketplace for Energy Flexibility

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- The need of flexibility in distribution grids is increasing rapidly:
 - Peak hours are causing overload to power lines and transformers
 - The use of renewable resources (wind, solar) is causing fluctuations
 - The amount of devices using electricity is growing in private households (Portable devices, Ecars, TV sets, computers, etc.)
- How can we use this fleet of devices to create **flexibility on demand?**

- **TERMs for trading small batches of energy (Flexibility)**
- Almost zero cost transactions >totally automated operations
- Micro payments made by ledger based tokens (IoTa)
- Minimised data transfer for trading&verification
 - How much?
 - How long?
 - Where (location)

- The current electricity markets are not suitable for trading of small batches of energy
- Location is not used as an asset – FLEXIMAR provides a new tool for localized power management:
 - Open source software tools and platforms used
 - Simple trading rules and bidding mechanisms
 - Open market for buyers & sellers
 - Almost real time operation

Use Case/Smartbots

Resource Managing Bot (RMB)

- Estimates the flexibility available from the building/facility
- Controls the devices locally
- Does metering/verification of accepted trades
- Shortest flexibility time slot 15 minutes
- RMB has advanced AI-based boundary computing algorithms

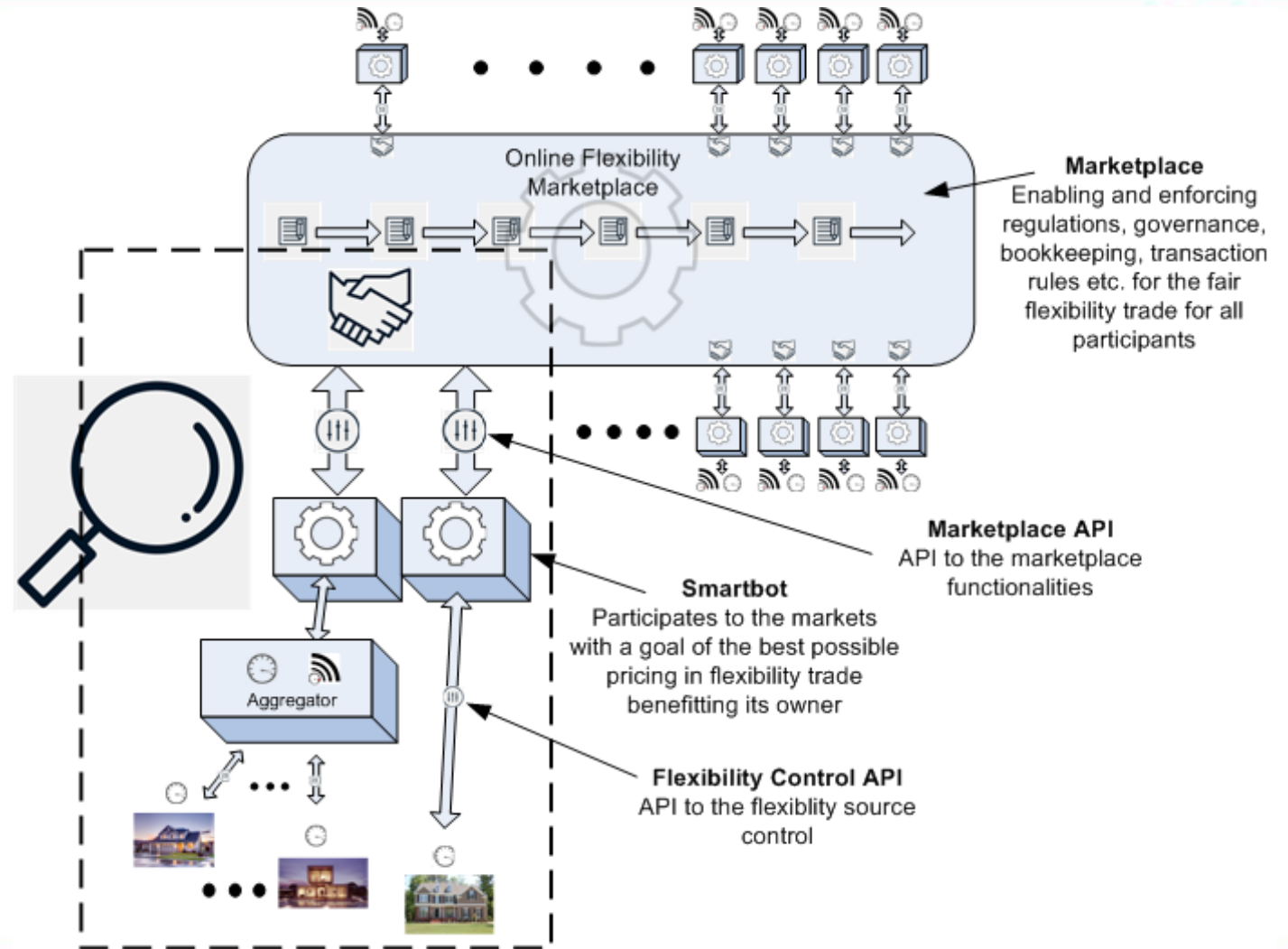
Energy Trading Bot (ETB)

- Communicates with Fleximar platform
- Makes the bids based on information from **RMB**
- Makes online contracts with Fleximar platform
- Follows market information in order to optimise the time/income



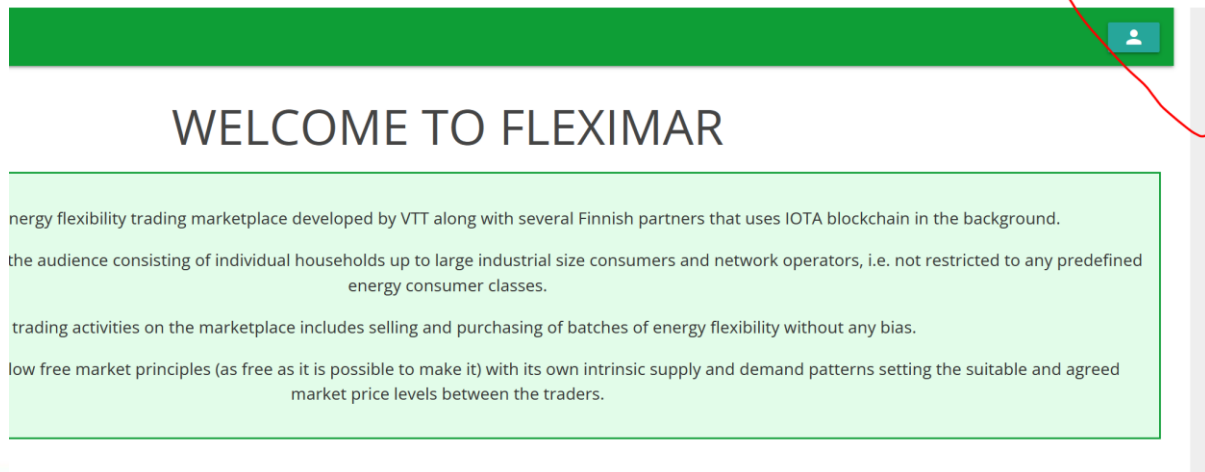
Use Case/Case Study

- Smartbots are making flexibility bids to marketplace
- Bids are visible to everybody and they can be purchased by buyers using IoTa wallet
- An agreement is made and verified by the marketplace
- Local smartbot gets message about the trade, fulfils the delivery and sends verification
- Marketplace makes micro-payment from the buyer to the customer



Key Takeaways

- **Want to study VTT's solution?**
- Go to fleximarex.com
- Create user ID for yourself
- Get detailed instructions, software examples **and make your own application,**



Thank You

For more information Contact
WWW.Fleximarex.com

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