StratusLab

Agile Development

StratusLab uses Scrum, an agile software development methodology, to coordinate the evolution of its open-source IaaS cloud distribution.

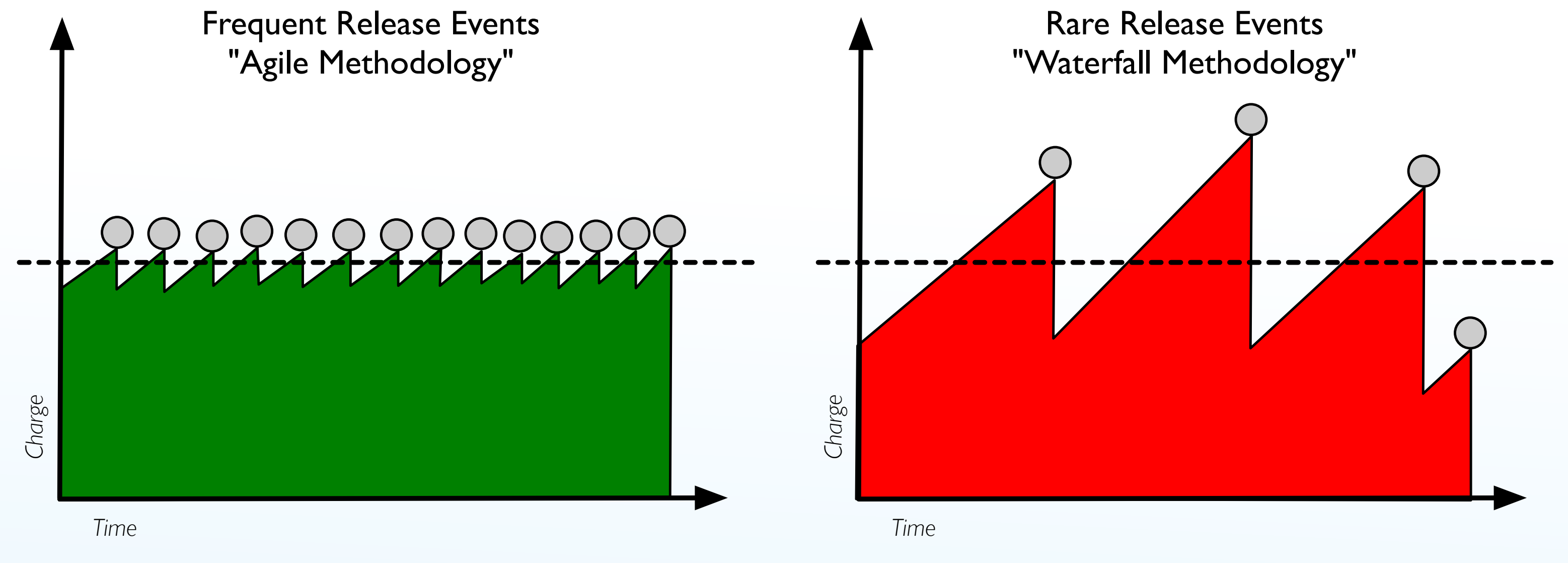
Scrum allows StratusLab to release frequent, high-quality increments of the distribution that evolve according to the current needs of users and system administrators.

Advantages

- New features and improvements in ***frequent releases***
- ***Continuous feedback*** informs design evolution
- Users state needs and ***adjust priorities*** based on real use of earlier releases
- ***Visible progress*** through frequent iterative releases
- No 'big bang' integration, ***significantly reduced risks***
- End of ***sprint demo*** forces developers to integrate and show their work using a functional system

Challenges

- High level of ***automation required***: build procedures, test procedures, and production upgrades.
- Functional developments must be divided into ***single-sprint tasks*** that can be implemented and demonstrated in a single sprint
- Developers must ***adapt to incremental development***, rather than relying on heavyweight up-front design
- ***Requires buy-in*** from entire development team



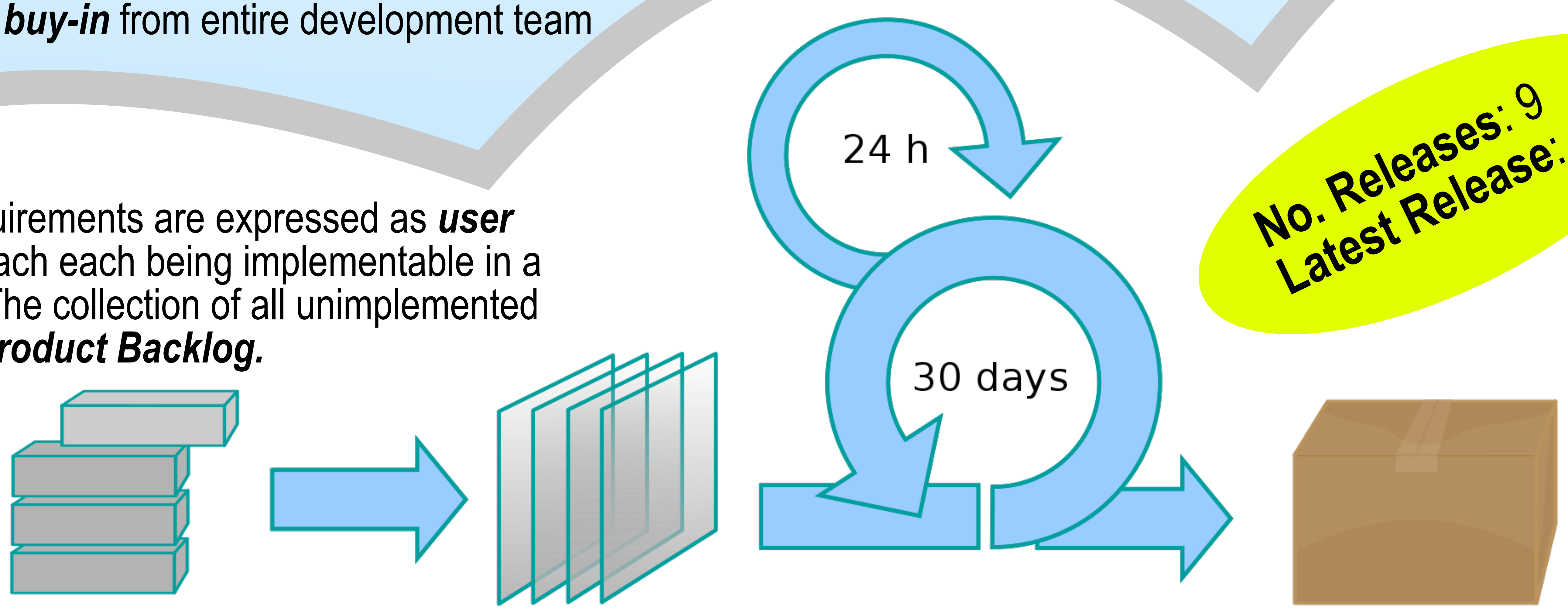
Smoother Effort
Less Risk

Effort Peaks
High Risk

Distributed Scrum is even more challenging, relying on ***tele- and video-conferencing*** for team meetings to bring the developers from the 6 partners together and on tools like ***JIRA to replace the post-its*** of a traditional Scrum board. Hallway conversations take place on ***Skype***!

Functional requirements are expressed as ***user stories***, with each each being implementable in a single sprint. The collection of all unimplemented stories is the ***Product Backlog.***

No. Releases: 9
Latest Release: v1.4



Product Backlog

Sprint Backlog

Sprint

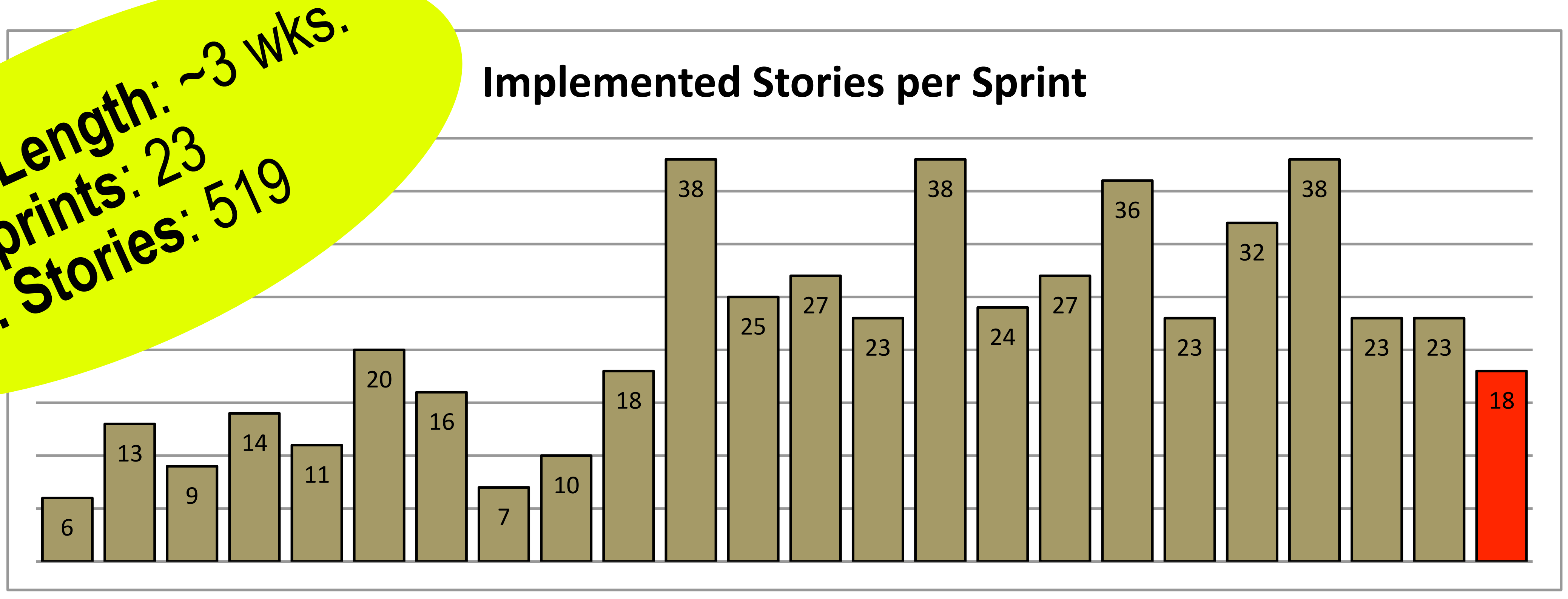
Working increment of the software

1 During ***Planning Meetings***, user stories are reviewed and selected for the sprint. Selected items become the ***Sprint Backlog***.

2 ***Daily Stand-Up Meetings***, lasting at most ***15 minutes***, ensure fluid communication during the sprint. Developers report on ***work completed*** in the previous day, ***planned work*** for the day, and any ***impediments.***

3 Each sprint concludes with a ***Demo Meeting***, where each implemented user story is shown.

Sprint Length: ~3 wks.
No. Sprints: 23
Impl. Stories: 519



Build, Test & Deployment Tools

- ***Git***: Source code management
- ***Maven***: Uniform build framework
- ***Nexus***: Build artifact repository
- ***Hudson***: Continuous build & integration
- ***Hudson/SlipStream***: Systems testing
- ***SlipStream/Claudia***: Service deployment

Website: http://stratuslab.eu
Support: support@stratuslab.eu
Contact: contact@stratuslab.eu

Centre National de la Recherche Scientifique
France

Universidad Complutense de Madrid
Spain

Greek Research and Technology Network S. A.
Greece

SixSq Sàrl
Switzerland

Telefonica Investigacion y Desarrollo S.A.
Spain

Trinity College Dublin
Ireland

StratusLab is co-funded by the European Community's Seventh Framework Programme (Capacities) Grant Agreement INFSO-RI-261552.