AETHER

Technical & Architecture

High-performance memory-safe web browser

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PART 1: COMPETITIVE CONTEXT

1.1 Intuition Statement

Aether Browser Vision: We are convinced that modern web users deserve a browsing experience that doesn't compromise between performance, privacy, and usability. Current mainstream browsers like Chrome prioritize data collection and resource consumption, while privacy-focused alternatives often sacrifice user experience and speed. Aether aims to fill this gap by delivering a lightweight, blazing-fast browser that puts user privacy first without the bloat of mainstream browsers. Our open-source approach ensures transparency and community-driven development, creating a browser that truly serves its users rather than corporate interests. By combining cutting-edge performance optimization with robust privacy features and a clean, minimal interface, Aether will redefine what users expect from their web browsing experience.

1.2 Objective Criteria Definition

Defined criteria across Business & Technical axes for browser comparison:

Business Criteria:

- Market Share & Adoption Rate
- Community Engagement & Open-Source Contribution
- User Experience & Ease of Use
- Privacy Protection Level

Technical Criteria:

- Page Load Speed & Real-time Latency
- Memory Footprint (RAM Usage)
- Web Standards Compliance (HTML5, CSS3, ES6+)
- Security Architecture & Sandboxing

1.3 Competitive Analysis

Criterions/App	Aether	Chrome	Firefox	Ladybird
BUSINESS				
Community features	Open-source, GitHub	Limited (Chromium)	Strong community	Open-source (new)
Ease of use	Minimal UI, Clean	Feature-rich, Complex	Moderate, Customizable	Basic (in dev)
TECHNICAL				
Memory Usage	<200MB base	>1,6GB	~350MB base	Lightweight
Web Standards	HTML5/CSS3/ES6+	Chromium (Full)	Gecko (Full)	Limited (in dev)
Cross-Platform	Windows/Linux/Mac	All platforms	All platforms	Linux/Mac (planned)

Extension Support	None yet	Chrome Web Store	Firefox Add-ons	None yet

PART 2: TECHNICAL & LEGAL AUDIT

2.1 Security & Legal Audit

GDPR/RGPD Compliance

Data Type	Purpose	Legal Basis	Retention	Storage Location
AETHER BROWSER				
Nb of tabs / Cpu % / OS	Metrics	Consent	3 Months anonymous	EU (France)
AETHER SITE				
Email	Account	Consent	Until deletion	EU (France)
Name	Profile	Contract	Until deletion	EU (France)
IP Address	Security	Legitimate	When load only	EU (France)

GDPR Checklist:

- ☐ Privacy Policy created
- ☐ Cookie consent banner implemented
- ☐ Data retention policy defined
- ☐ Right to deletion implemented
- ☐ Data portability feature ready
- ☐ DPO designated or not required

Security Risks (OWASP Top 10)

OWASP Risk	Applicable?	Mitigation Strategy
SQL/NoSQL Injection	Yes/No	Prepared statements, input validation
Sensitive Data Exposure	Yes/No	Encryption at rest/transit, HTTPS
Broken Access Control	Yes/No	Role-based access control (RBAC)
Security Misconfiguration	Yes/No	Security headers, hardened configs

2.2 Accessibility Strategy (A11y)

Standards & Targets: WCAG 2.1 (International) / RGAA 4.1 (France) - Target Level: AA

Accessibility Features Checklist:

Visual Impairments:

☐ Screen reader compatibility (ARIA labels)

☐ Sufficient color contrast (4.5:1 for text)

☐ Resizable text without layout breaking

Motor Impairments:

☐ Full keyboard navigation

☐ Large clickable areas for shorcuts and functionality (min 44x44px)

Cognitive Impairments:

☐ Clear, simple language

☐ Consistent navigation

2.3 Team Skills Audit

Required Skill	Importance	Level of Axel	Level of Matteo	Level of Nathan	Level of Thomas	Level of Corentin
TECHNICAL						
Engine / Core	Critical	4	2	1	4	2
User interface	Critical	4	5	3	4	2
Build solution and installer	High	5	2	2	3	2
Site exposure	Medium	5	4	3	3	4
DevOps / Infra	Critical	5	3	2	3	4
Security Expert	High	3	2	2	4	2
SOFT SKILLS						
Project Management	Critical	3	3	3	4	4
UX/UI Design	Critical	4	5	4	4	2
Legal/GDPR Knowledge	Medium	4	2	2	2	2

APPENDIX: USEFUL RESOURCES

Legal & Compliance

- CNIL (France): https://www.cnil.fr/
- GDPR Official Text: https://gdpr-info.eu/
- OWASP Top 10: https://owasp.org/www-project-top-ten/
- WCAG 2.1 Guidelines: https://www.w3.org/WAI/WCAG21/quickref/

Cost Calculators

- AWS Pricing Calculator: https://calculator.aws/
- Google Cloud Pricing: https://cloud.google.com/products/calculator
- DigitalOcean Pricing: https://www.digitalocean.com/pricing/

Benchmarking Tools

- G2: https://www.g2.com/ (SaaS reviews)
- Stack Share: https://stackshare.io/ (Tech stack comparisons)

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