

## What are Ricardian Contracts?

A Ricardian Contract is a legal contract that was introduced first in 1995 by a well-known programmer, Ian Grigg. The concept is now part of the blockchain as well. Here is the basic definition:

“It is a form of digital documents that act as an agreement between two parties on the terms and condition for an interaction between the agreed parties.”

What makes it unique is – it is cryptographically signed and verified. Even when it is a digital document, it is available in a human-readable text that is also easy to understand for people (not only lawyers). It is a unique legal agreement or document that is readable for computer programs as well as humans at the same time.

Simply put, it has two parts or serves two purposes. First, it is an easy-to-read legal contract between two or more parties. Your lawyer can easily understand it, and even you can read it and understand the core terms of the Contract.

Second, it is a machine-readable contract as well. With [blockchain platforms](#), these contracts can now easily [hashed](#), signed, and can be saved on the blockchain.

All in all, Ricardian Contracts merge legal contracts with technology, [blockchain technology](#) to be precise. They bind the parties into a legal agreement before the execution of the actions on the blockchain network.

```
Please include attribution to 101blockchains.com with this graphic. <a href='https://101blockchains.com/blockchain-infographics/'><img src='https://101blockchains.com/wp-content/uploads/2018/10/Ricardian_Contracts.png' alt='Ricardian Contracts='0' /> </a>Copy
```

## The History Behind Ricardian Contracts

Even though Ricardian Contracts are something new to the blockchain, but it is three-decades-old concepts. The Ricardian Contract is not the only modern term related to blockchain that was introduced in the 1990s.

Many recently applicable ideas like [Smart Contracts](#) and [Proof of Work](#) were also introduced at the same time but implemented later when blockchain went mainstream.

### **Ian Grigg: The Man Behind the Ricardian Contracts**

Ricardian Contracts were initially introduced as part of the Ricardo Payment System back in 1995. Ian Grigg, who was the man behind this new type of legal document, is considered as one of the pioneers of financial [cryptography](#).

The interesting thing is, when he developed Ricardian Contracts, he was still in school. This is why people also call these Ian Grigg Ricardian Contract.

Anyone who can read his work can realize that he was well ahead of his time. He developed an interesting concept to digitize a legal contract or any financial instrument or asset.

However, in the 90s, the appropriate technology to implement his ideas according to their merit was not available. But this limitation is no more thereafter the emergence of blockchain technology.

He is also working as a partner in Block.One, one of the leading providers of high-performance blockchain solutions in the world. It is also the same company that introduced the concept of Ricardian Contracts to the blockchain, which is also called EOS Ricardian Contracts.

### **How Ricardian Contracts Work?**

Ricardian Contracts are primarily a human-readable legal contract between the two parties. You can use this agreement in the court of the law as they bind you and the other party in a legal agreement. You may need lawyers to create the actual legal agreement, after which both parties can read, understand, agree, and sign the document. Only after that can you digitalize or hashed so that it can be used by the software to run on the blockchain platform.

For the validity of the legal Contract, an issuer can create a legal framework. Both parties or holders fill that legal framework and agree on it by signing it.

Keep in mind, Ricardian Contracts are a type of Smart Contracts or use the code used in Smart Contracts. They are also live contracts that can be changed after the execution of an event.

For example, in the case of a contract that is about buying and selling a car between the two parties, one clause can be about contacting an authority that can confirm if the seller is the actual owner of the vehicle. Once you have the information, you can add it to the Ricardian Contract, creating a new version of the Contract.

This way, the Ricardian Contract executes different events and moves towards a logical conclusion based on the outcome of each event.

- 

### **Reference to the Hash**

- 

Once the Contract is prepared, it is signed digitally, and the Contract is agreed to refer to the hash of the Contract. For example, if there is a financial transaction taking place under the agreement, the transaction will apply to the hash of that Contract, along with paying parties.

- 

### **Hidden Signature**

- 

Ricardian contracts also use hidden signatures to make the process more secure. The signing of the contracts takes place through private keys. Later, the hash of the agreement is used to attach that hidden signature to the Contract.

## **What's the Difference between Smart Contracts and Ricardian Contracts?**

Blockchain uses another major form of digital Contract, called Smart Contracts. So how these Ricardian Contracts any different from already in use Smart Contracts? Let's explore the differences in detail.

### **Smart Contracts**

Just like Ricardian Contracts that we discussed earlier, Smart contracts are also machine-readable Contract, or you can say, set of instructions that control and direct the upcoming actions and events.

In the blockchain industry, Smart Contracts act as contracts to provide trust during an exchange. You can use these contracts to exchange money, shares, property, and other assets on the internet. You can do that by defining obligations between two parties and executing them through computer code.

They are an essential part of the process on the blockchain network where the parties remain anonymous.

These are the core characteristics of a Smart Contract:

- Executes on its own based on the instructions provided in the computer code
- Self-verifying and auto-enforcing
- Immutable, which means you can't edit the terms
- Cost savings

The only issue with Smart Contracts is that they are not legally binding agreements, which is why, if anything goes wrong, it is hard to prove a case against fraud or scam in the court of law as it is not a legally binding agreement.

The second core difference is it is not human readable as well. It is just a code, but Ricardian contracts are readable by both humans and machines.

### **Ricardian Contract**

On the other hand, Ricardian Contracts outline the intentions as well as actions based on the legal agreement that will take place in the future.

The fundamental difference between both of the contracts on blockchain platforms is the type of agreement. One (Ricardian contracts) records the agreement between multiple parties, while the other (Smart Contracts) executes whatever is defined in the agreement as actions.

Ricardian Contract is a legally valid contract, while Smart Contracts are not. It turns a human-readable legal contract into machine-readable code that can be executed by the software.

Simply put, Smart Contracts automate the actions on a blockchain application. However, they also have some limitations, as you cannot have a clear idea of what happens next in many scenarios. In that case, you can't use Smart Contracts to automate something that you are not sure of.

In such a case, if an event occurs that is not planned for in the instructions provided in the Smart Contracts, it can cause a significant problem. As a Smart Contract also doesn't have any legal framework that can define how to proceed forward in such an event, it just doesn't work in such cases. You can also say, Smart Contracts lack the ability to evolve around such scenarios in the absence of a legal framework.

Here are the core characteristics of the Ricardian contracts:

- Available in printable form and human parsable
- Program parsable with all forms equivalent in terms of manifest
- Signed by the issuer and both parties

## Smart Contracts Vs. Ricardian Contracts: Comparison Table

Here is a quick comparison table of Ricardian Contracts vs. Smart Contracts:

	<b>Smart Contract</b>	<b>Ricardian Contract</b>
<b>Purpose</b>	Execute the terms of an agreement	Record the terms of an agreement as a legal document
<b>Flow</b>	Automate actions on the blockchain-based applications	It can also automate operations on the blockchain-based applications
<b>Validity</b>	It is not a legally binding document	It is a legally binding document or agreement
<b>Versatility</b>	They can't be Ricardian Contracts	Any Ricardian Contract can be a Smart Contract as well
<b>Readability</b>	Smart contracts are machine-readable but not necessarily human-readable	Ricardian Contracts are both machine-readable as well as human-readable

### Ricardian Smart Contracts: Introduce Clarity to the Contracts You Create

This is precisely where Ricardian contracts come in. It adds to the intentions and brings clarity to the actions by adding a legal framework to the Contract. It defines the contract intentions and answers many questions that remained unanswered by Smart Contracts.

For example, it answers what to do if there are any applicable consequences of an action? It defines the scope of the Contract. It also describes the parties involved and their representatives, if any.

Most importantly, Ricardian Contracts define the regulations in legal terms that can be used to resolve the dispute.

Prior to the Ricardian Contracts, prevention of fraud and conflict was not easy in the crypto industry. Ricardian Contracts allow more security to participants who want to invest or make use of blockchain technology.

In addition, Ricardian Contracts can be used to add authenticity to the process of selling or buying an asset on the internet or the blockchain network. Ricardian Contracts can define in legal terms what you are buying or selling, and under what legal terms, who are the participants, and more legal information about the exchange.

Simply put, Smart contracts, when merged with Ricardian Contracts, can provide a robust and foolproof process for trade on the internet.

In such a case, it becomes a Ricardian Smart Contract. Also, a Ricardian Contract can act and do the same as a Smart Contract, as you can define both legal terms and instructions to execute as a code, but a Smart Contract cannot act as a Ricardian Contract.

### **What Information Does It Contain?**

Anything that can be programmed to define a legal contract between multiple parties, as well as for instructions that can be used to execute an event or action, can be part of Ricardian Contracts. Some essential parts of the agreement it may contain include:

#### **Parties**

How many parties are involved? Who are the parties making this agreement? Who are their representatives?

#### **An Element in Time**

What is the validity of the Contract? Is it applicable for a limited period of time or forever? What does it define in terms of time? For example, a deal needs to be reached within three months, or the Contract gets null and void.

#### **Adding Exceptions for Different Possibilities**

#### **Conditions**

#### **Are They Secure?**

Yes, they are. Ricardian Contracts are very secure as they use a cryptographic signature. Each document in the Contract has unique identification by its hash.

What does this mean? This means once it is agreed upon by both parties and turned into a machine-readable form, it is impossible for anyone to arbitrarily change the legal agreement.

This also offers protection from a commonly used tactic in legal agreements called frog boiling. Under traditional legal agreements, an issuer with the upper hand keeps changing the terms in the agreement during the execution. This is not possible with the Ricardian Contracts.

To sign Ricardian Contracts, you can use [private keys](#). When you add the signature of the issuer of the Contract to the document, it creates a legible and binding agreement about the information described in the document. It is also possible to track the parties involved with the help of the private key and hold them accountable.

### **Benefits of Ricardian Contracts**

Ricardian contracts made some new possibilities a reality on the blockchain networks. Some of its applications as well as benefits include:

- For the first time, it allows the legally-enforceable transfer of physical assets as well as rights on the blockchain network, which was not possible with Smart Contracts. When smart-contracts were also used for the same purpose, but they can't legally-enforce the transfer.
- Ricardian Contracts can save effort, costs, and time you may have to invest when a dispute arises. The machine-readable legal contracts are not open to any interpretation, which is the main drawback of human-readable legal contracts. Lawyers can interpret the content based on their liking, which may result in a conflict.
- Ricardian Contracts are a significant step forward in adding more transparency to the blockchain network.

### **Issues of Ricardian Contracts**

As it is still early days for the Ricardian Contracts, some things still need answers or more clarity. For example, who will enforce the Ricardian contracts? It is still an unanswered question of how arbitration can be integrated into the [EOS](#) ecosystem. Similarly, how can users file claims?



However, Ricardian Contracts are based on pre-defined and pre-agreed legal contracts. Pre-agreed and legally binding means when the time arrives, you can produce those to the judges in the court. Ricardian Contract can at least let the arbiters decide about the original intent as well as obligations.

On the other hand, the technology is still in the full development phase. The legal framework that revolves around Ricardian contracts is still lagging as we seek more clarity.